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ABSTRACT

This five-volume report presents detailed procedures and findings of research on Japanese high school seniors, their choice of courses, educational and career expectations and preferences, and the extent to which these attitudes conform to relationships in Japanese labor markets. In this second volume, Chapter 2 traces the development of the Japanese educational system and describes the contemporary situation in schools and the labor force, and current issues in Japanese education. Chapter 3 investigates associations between family background and the type of secondary school, and presents a Stage 1 decision model for the allocation of youth among curriculums. The entire five volume report is available as VT 013 653-013 657. (BH)

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A THEORETICAL AND EMPIRICAL ANALYSIS OF VOCATIONAL PREPARATION IN JAPAN

Volume II of five volumes

The Japanese Educational System, the Study Sample, and Student Selection to Upper-Secondary Schools and Curricula

December, 1970

U.S. DEPARTMENT OF
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Volume II of five volumes

The Japanese Educational System, the Study Sample, and Student Selection to Upper-Secondary Schools and Curricula

Project Grant No. OEG-3-6-000537-0744
Project No. 5-1325

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December, 1970

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CHAPTER II

THE JAPANESE EDUCATION SYSTEM AND HUMAN RESOURCES

The allocation of youth into more or less education and education of one kind or another, student perception of schooling and career prospects and their interrelationships, and the factors that enter into these actions and perceptions can be adequately understood only in the context of Japanese education and labor market developments. The purpose of this chapter is to provide a quick sketch of some of those developments, and some of the currently discussed issues of educational policy in Japan. However, only incidental comments concerning the "life commitment" system are included.[1] We begin, in Section I, with a summary of Japan's educational heritage and of post-war changes in the educational system. From this we go on, in Section II, to examine the pace of increase in enrolment rates and changes in the educational structure of the labor force over time, as successive cohorts of Japanese youth have moved through the schools and into participation in the economy. A third section looks at the contemporary situation and the school sample in geographic perspective. Finally, in Section IV

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[1] For a fuller discussion of that system, see Chapter VI.

we present some of the current issues in the dynamics of human resource formation in Japan today.

1. The Japanese Educational System and Its Evolution

The Japanese educational system has long been a highly pragmatic one, both economically and politically. Since at least the dawn of the Meiji era it has been characterized also by almost continuous processes of change and adaptation, picking up now one, now another aspect of educational systems from the West while maintaining, nevertheless, a distinctive national character. Even the reform of the school system in an American image during the occupation years immediately after World War II, was less of a break with tradition than is sometimes supposed. Nevertheless, this was unquestionably one of the major watersheds in Japanese educational history, and it is convenient to divide our discussion into the period from the Meiji Restoration to World War II and the years since that war.

From the Meiji Restoration to World War II

Much has been written about the history of education in Japan from the Tokugawa and early Meiji periods to the present and we make no pretense to contributing any special insights on that history. What we do is to present a highly over-simplified summarization, centering our remarks upon three themes: nationalism, Confucianism, and economic modernization.

The word "nationalism" refers in the Japanese case to more than a national consciousness or exaltation of one nation above all other. Japanese nationalism combined national awareness, a common social ethic, and a system of religious beliefs which emphasized the divinity of the Japanese Emperor and proclaimed the international superiority of Japanese culture. In some respects Japanese nationalsim is extremely difficult to separate from Confucianism and the Shinto faith. Confucian philosophy provided the ethical system to fill the corresponding void in the "emperor workship" of Shintoism, and together they influenced the fundamental character of social relations in Japan in terms of interpersonal relationships and specific patterns of authority. Moreover, in assigning a special social role to education, Confucian philosophy defined the content, process, and value of education and the proper position and posture of the educated man in Japanese society. "Economic modernization" refers primarily to the adoption of Western technology, beginning as far back as the middle of the nineteenth century. Such technology was to play an extremely important role in the shaping of Japanese education.

In 1872, as one of its first major policy actions, the Meiji government laid out plans for a national system of universal primary education. Prior to this time Japan had a widespread system of terakoya, or Confucian temple schools, in which use of the abacus and (less often) basic literacy were taught; these schools served

primarily sons of merchants and traders. Important also was the education provided sons of the samurai in the feudal courts. The new plan provided for a transfer of these schools into a national system, and an extension of their coverage to provide four years of compulsory, coeducational schooling for all. It was intended that the new educational system (as it was soon to become) would serve two purposes--national unification and economic growth. The Meiji government, acutely aware of its tenuous control of a fractionated feudal society, sought to break some of the local hierarchical links, of which regional feudal control of education was one, and, at the same time, to instill in the Japanese population at large a sense of nationhood. In addition to nationalistic ends, a system of compulsory education was seen as one of the essential components of economic development.

Dutch contact had succeeded in introducing limited but influential medical, industrial, and military (the canon) knowledge to many of the coastal areas remote from Tokyo and from the direct control of the pre-Meiji Shogunate. Apprehensive of large-scale "Westernization" independent of control from Tokyo, the Meiji government hoped to balance commitment and adherence to traditional Confucian philosophy with limited quantities of Western learning. A common compulsory education offered control of the Western knowledge taught and of the patterns of governmental authority conveyed to the young.

It would be a mistake to equate the incidence of governmental policy with its fruition. In fact, although government policy in Meiji Japan called for the establishment of a nationally integrated system of primary schools, many factors militated against realization of such a system in its early years. Among these were the shortage of school facilities, a lack of teachers trained in technical knowledge, and resistance among both feudal elites and peasantry. Also important in the short-run was ignorance on the part of national officials of the means of implementing educational policy. The temple school pattern and Confucian predominance in centers of higher learning continued relatively unrestrained.

These difficulties and the Emperor's commitment to economic modernization led the Meiji government to solicit the aid of Western educational experts--notably, representatives of the common school system of the United States. This contact culminated in the construction of model schoolhouses with replicas of western school desks and blackboards. However, that period of American influence in Japanese education was a short one, marked by trial-and-error experimentation with variations of the American model of universal education. Japan was to find a more complete and satisfactory example of a nationalist educational system suited to her purposes in the German pattern.

The guiding principles of Japanese education under the German influence were formally presented to the nation in the Imperial

Rescript on Education, issued in 1890. The Rescript effectively ended the period of searching for Western answers and established the role of education firmly in a nationalist context, where it was to remain with only minor modification until the Japanese defeat in World War II. The Rescript emphasized the citizen's responsibility to be obedient and loyal to the Emperor and the Confucian ethic, and it stressed the obligation of every individual to attain an education in order better to serve the Emperor and the state. Coordinate with this pronouncement on education's value to the state was the establishment of a differentiated multi-track education system, elaborated in both levels and types of curricula, and with separate post-elementary tracks for girls. In fact in 1908, when compulsory elementary education was expanded from four to six years, only the first three of the six remained coeducational; termination of coeducational schooling after the third grade constituted a major curricular division within the system, a division consistent with traditional sex roles and coincident with the beginning of special training for those roles. This division directed all but a very few highly privileged Japanese women into schools teaching only home-making arts.

By 1910 approximately 95 percent of the on-coming cohorts of Japanese children were completing at least the six years of the regular elementary schools. This was the critical transition point, to the labor market or to one or another form of further education and training.

The main sets of alternatives for boys were: (1) the academic middle schools; (2) one or another vocational secondary school; (3) another two years of elementary education (which might be terminal or might lead to normal schools or somewhat higher-level vocational schools); (4) direct entry into the labor market. This last alternative might be possible with (though more often without) one or another sort of informal supplementary or more formal apprenticeship training.

For girls the main alternatives of 1910 were: (1) to terminate schooling and formal training altogether; (2) to attend special classes to learn distinctively "female skills" outside of the regular school system or (3) to continue into the "girls high schools." These were a distinctively Japanese institution despite some analogies with British-American "finishing schools" for the making of gentlewomen. Middle-level normal schools, whether for men or women, were at first only loosely linked to the rest of the educational system and as of 1900 higher normal schools were open only to the graduates of the male academic middle schools. However, as the educational system expanded through the first two decades of this century, a variety of normal schools came to draw also on the graduates of higher elementary (8 year) education, and of "girls' high schools" (some of which were beginning to be more general in their curricula.)

Of special importance in the pre-war educational system were the academic middle schools and the vocational schools for boys. At

completion of his sixth year in school the Japanese youth of 1910 faced the first of the important examinations that controlled flows through post-primary segments of the educational system. The most fortunate or successful gained entrance directly to the academic track, which constituted the main route to higher schools and universities. About ten percent of the male cohort of 1910 attended such schools, with proportions rising toward a fifth over the ensuing thirty years. Of these favored youth roughly a tenth in 1910 and about one in six by 1935 continued to higher education.

Theoretically, the academic middle schools were open to all students qualifying by merit, but in fact entrance was severely restricted by sex.[1] Also, among rural people relatively few could afford the expense of sending their children to boarding schools, even when prior training and abilities enabled a rural youth to score well on the examinations. Meanwhile, nevertheless, the number of candidates for continuation at each successive level of schooling was rapidly increasing. Competition for entry became ever more severe, and schools at each level, from the elementary stage on, derived differential prestige according to the success of their graduates in obtaining

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[1]This was both direct and because of the indirect effects of the division between boys' and girls' classes in the last half of elementary schools. Girls were rarely qualified to compete successfully in the critical examinations that controlled flows through the post-elementary schools and determined which individuals should be selected for entry to preferred tracks.

places at the prestigious institutions of the next higher level. In this way an elaborate system of "first schools" evolved, and along with this a proliferation of examinations at all levels in the system.

"First schools" were typically associated with prestige schools at the next higher levels, thus forming a closely articulated system of educational advancement. These schools were and are almost uniformly located in the major urban areas of Japan, and were closely associated with Imperial Universities or leading private universities and colleges in these urban areas. Thus, the most prized places in the academic track were clearly open disproportionately to urban dwellers and those who could afford the services of private tutors and the costs of travel and living away from home. Despite attempts at both decentralization and democratization of the educational system in the wake of World War II, this heritage has survived in Japan today; it is reflected at one extreme in the use of examinations for selection from kindergarten into elite-bound elementary schools. More important, it is closely bound up with the debates about the pervasive Ronin system, whereby youth who fail to win entrance to the university of their choice come back to compete in the examinations again, and often yet again.

The system of vocational tracks introduced with the Imperial Rescript evolved thereafter in a German image, but characteristically modified to suit Japanese perceptions and purposes. Vocational

tracks came to include curricula of five major types: agriculture, fishery, commerce, industry, and colonization. All except "colonization" have approximate counterparts at the senior secondary level today, though the fishery schools enroll very few students and have been excluded from our study. Some of the technical courses gave entry into "higher" schools of engineering,[1] comparable to the European polytechnique institutes. Also, by the 1920's and 1930's another significant minority of male elementary school graduates were being recruited directly into three-to-five year technical programs operated by large industrial firms to train skilled workers for their plants. Most of these trainees were hired under a "life commitment" system, which made such a position in a big firm highly attractive to children of laboring families even as it also ensured a return to the employer on his investments in training.

The formal incorporation of post-elementary education for working youth as part of the national educational system came comparatively late, with creation of the "youth schools" in 1935. In part these schools were an extension of upper elementary education, but they included courses of part-time instruction in lower-level vocational skills and some of the trade courses ran for as much as five years beyond termination of study in the elementary grades.

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[1]Not to be confused with the five year "technical junior college" in Japan today.

Established during the period of militaristic expansion on the continent of Asia, a period also of preparation to extend Japanese power in the Pacific more generally, these schools were strongly nationalistic in character. By the time of the attack on Pearl Harbor the youth schools were enrolling a majority of boys between the ages of 13 and 15 and were used primarily as institutions for pre-induction military training. With the increasing strains of World War II the youth-school pattern of mixing work in shop and factory with part-time schooling and military training was temporarily extended to young people going through the regular senior secondary and higher levels of the educational structure as well,[1] but this crisis expedient ceased immediately with the cessation of hostilities. So did the formal institution of youth schools in their pre-war and wartime nationalistic modes.

The Japanese Educational System After World War II

Japanese defeat in the Pacific war carried with it some profound implications for change in both Japanese government and education. Japanese officials, well aware of some of those implications, had already begun reform of the educational system before

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[1]University students continued to be exempt from military service throughout the war; however, neither they nor their professors were exempt from service in war industry. In the last years of the war it was common for university classes to meet in the industrial plants.

the army of occupation arrived. Leading men in the Ministry of Education had accurately anticipated the need to remove all militaristic teachers and school positions, to modify the curriculum, and to begin the rewriting of textbooks. In structural matters, the American system was taken as the model most likely to be acceptable to the visiting American experts. Thus, even before American educators landed on Japanese soil the Americanization of the educational system was well under way.

Among the most significant changes in the early months following the end of the war was the withdrawal of the Imperial Rescript on Education and the drafting of the new laws expressing a democratic philosophy of education. Schooling that had been the alleged duty of every Japanese, in appropriate service to his emperor and his nation, was recast as the right of every individual, with an emphasis on equality of opportunity and a chance for the realization of individual potentials and the expression of individual interests and preferences. This individualist-equalitarian philosophy provided not only the basis for further democratization of Japanese education, but also the rationale for decentralization of control.[1]

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[1]Although the Japanese system of compulsory schooling remained a national one, certain important powers were given or returned to local school districts. Prefectural units were given the power of teacher certification and control of the entrance examinations for upper-secondary schools (grades 10 through 12). Local school boards and teachers were given independent authority to monitor and select textbooks and to modify optional portions of the compulsory school curriculum.

Decentralization, democratization, and modernization (American style) were the rubrics most widely used until recently in describing changes in post-war Japanese schooling.

It would clearly be a mistake to suppose that Japanese education has become a replica of that in the United States, however. Such definitely has not been the case at any time; differences in cultural heritage are not wiped out by legal fiat or school reorganization. But where American ways have met the desires or needs of the Japanese, those ways have been accepted and integrated into the Japanese system by the same process of discriminative and creative imitation that has been the genius of Japan in so many other respects as well. By the same token, there has also been, most recently, a decided drift away from American models and a growing interest, once again, in the building of a more elaborate multi-track system, looking more to patterns on the continent of Europe and in Japan before World War II.[1] Through all this the thoroughly Japanese private

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[1]The removal of control over "moral" education from the central authorities was highly successful so long as men who opposed earlier Japanese militarism and who feared the re-emergence of militaristic nationalism predominated; but dissatisfaction with the limitations of social studies American style as a substitute together with a growing concern among adults about lack of "moral commitment" and what they view as "excessive individualism of outlook among Japanese youth" provide support for efforts to reinstate the central bureaucracy in control over the content of new national "moral education." Both where this control should lie and what should be the content of moral education were being widely debated in Japan in the mid-1960's. Similarly, whatever the degree of decentralization of power and control over appointments and examinations--and decentralization in these respects is substantial--also continuing in evidence was

educational sector has thrived, important at all levels of the system except the compulsory grades.

First of the major changes in the structure of Japanese education was the extension of compulsory schooling from six to nine years. Thus the pre-war lower academic middle schools and higher elementary schools were combined to produce a general three-year lower-secondary school patterned after the junior high school in the United States. In addition, the earliest forced selection point in the pre-war system was eliminated by the formal (but non-mandatory) extension of coeducation throughout the national system. Each of these modifications was intended to democratize educational opportunity, and each involved basic challenges to predominant social norms.

At completion of junior secondary school (9th grade), three fifths of the youth of 1963 entered the upper secondary schools on a full-time basis; the proportion today is past the 70 per cent mark. This has occurred despite the fact that these schools have presumably been open only to those qualifying on entrance examinations. What happens in the main is examination selectivity of access among types of upper secondary schools, and especially to the more prestigeful

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a heritage of formal and even self-effacing deference to those in the most prestigeful positions that has no real counterpart in the United States. These matters of form can become also matters of substance when they effectively constrain viable options.

of those offering academic courses. The upper-secondary program continues to distinguish among the major divisions of pre-war secondary education: academic (and non-academic) general, technical, commercial, and agricultural. "Comprehensive schooling" beyond the compulsory years has been limited almost entirely to the inclusion of academic and non-academic general curricula in the same school, although there are also rural "combined schools" in some prefectures, where general and agricultural tracks or, less often, general and commercial tracks are offered within the same school establishment.

The proportions of lower-secondary-school graduates of 1963 entering into full-time upper-secondary schools was almost as high for girls as for boys (59.4 and 61.3 per cent, respectively). This is the age cohort represented by our study of senior students of 1966. There are virtually no drop-outs, which means that a substantial majority of each age cohort are included among the graduates of senior secondary school. Their distributions among types of course, and the proportions of those enrolled in each course-type who were full-time and part-time students are shown in Table 2-1. The figures can speak for themselves once the sorts of curricula to which they refer are made clear. Examples of curricula as reported by the Ministry of Education are shown in Table 2-2.

General A is a non-academic all-round or general senior-

TABLE 2-1

UPPER SECONDARY SCHOOL ENROLMENTS, 1966

(Excluding enrolments in advanced or special courses)

Type of Course	Total, Both Sexes	Per Cent Enrolled Part-time	Per Cent Who Were: Male	Female
	Number (1000)			
Total	4,987	10.2%	52.5	47.5
Full-time	4,480		51.1	48.9
Part-time	507		63.6	36.4
	Per Cent			
Total Full-time	100%			
General (B + A)	60.1		9.5	
Agriculture & Fishing	5.3		15.6	
Technical	11.6		15.7	
Commercial	17.1		8.5	
Domestic Arts	5.6		7.7	
Others	0.3		1.6	

Source: Japan Ministry of Education, Report on Basic School Statistics, 1966.

secondary-school curriculum, whereas General B is the academic course. The important differences are in the heavier mathematics and foreign language requirements in General B, the wider range of non-academic electives in General A. In each of the vocational curricula approximately half of the subjects studied could be classified as essentially "general." The technical-school students are comparatively high on mathematics, the Commercial students on

TABLE 2-2

EXAMPLES OF FULL-TIME CURRICULA IN JAPANESE SENIOR SECONDARY SCHOOLS

	General B (Academic)	General A	Technical	Commercial	Agricultural
Japanese language	15	12	9	9	9
Social Studies	15	13	9	9	9
Mathematics	15	9	13	9	7
Science	15	12	6	6	9
Foreign languages	15	9			
Domestic Arts	4 girls	4 girls		4 girls	
Health and Physical Education	11 boys 9 girls	11 boys 9 girls	9	9	9
Fine Arts	4	6			
Electives (subjects other than above)		15 boys 13 girls			
Industrial subjects			52		
Commercial subjects				41	
Agricultural subjects					55
Special Curricular Activities	3	3	3	3	3
Credits applicable to any subject	9	12			
Total	102 boys 104 girls	102 102	111	102	111

Source: Education in Japan, Ministry of Education, Japan, Tokyo, 1967, pp. 68-69.

foreign languages. While it must be remembered that these may be idealized exzmples, the broad picture is one of a quite even mix of general and specialized training in the vocational schools. There are of course variations of specialization within the vocationa, the commercial and the agricultural schools.

Other options open to and taken by graduates of the compulsory 9-year sequence are indicated in Table 2-3. Again we show the figures for 1963 because this is the cohort to which the main body of this monograph refers. The most important of the types of training or education for working youth after the part-time courses in upper-secondary school, already mentioned, are the public vocational training centers and programs of training within industry. The "miscellaneous schools," which are mainly a carry-over from pre-war patterns and have been mainly female, are disappearing for boys and have dropped very sharply in their enrolment proportions even for girls.[1] Formal training within industry is relatively less important for graduates at the lower secondary level than it was in earlier decades, when few entrants to the labor market had higher levels of schooling. Nevertheless, such training is very important for the youth involved

[1]The rapidity of this latter change around the early 1960's is remarkable. In the 1962 cohort of girls completing junior secondary school, 56 per cent entered full-time upper-secondary schools, and 13 per cent entered "miscellaneous" schools. Two years later, in the 1964 cohort, these proportions were 62 and 8 per cent, respectively.

TABLE 2-3

DESTINATIONS OF NINTH GRADE GRADUATES OF 1963

	Ninth Grade Graduates, 1963		
	All	Males	Females
Total Number (thousands)	2, 387	1, 237	1, 150
Percentage Distributions			
1. Full-time Upper Secondary School or Technical Junior College	60.5	61.3	59.4
2. Part-time Upper Secondary School	5.5	6.8	4.0
3. Correspondence Upper Secondary	0.6	0.5	0.8
4. Special course; Upper Secondary	0.1	0.1	0.1
5. Youth Class	0.5	0.4	0.7
6. Social Correspondence Courses	0.3	0.3	0.4
7. Public Vocational Training Center	1.3	2.2	0.4
8. Training within Industry	2.2	2.6	1.7
9. Training Farm	0.2	0.3	0.1
10. Miscellaneous Schools	6.4	2.2	10.9
11. Two (or more) kinds of training reported	1.8	1.9	1.7
12. Total with some form of education or training after compulsory school	79.4	78.6	80.2
13. No post-compulsory education or training	20.0	20.7	19.2
14. N.R.	0.6	0.7	0.6
Total	100.0	100.0	100.0
15. Total receiving training within industry (item 8 above or in combination with others)	2.7	3.4	2.0
16. Total receiving training at Public Vocational Training Centers (item 7 above or in combination with others)	1.4	2.5	0.4
17. Sum of Rows 16 and 17 minus overlap	4.1	5.8	2.4
18. Total with some form of Upper Secondary Training	68.0	70.2	65.3

Source: Japan, Ministry of Education, MEJ 6631.

(roughly 3 per cent of a cohort). Meanwhile the (mainly new) public vocational centers are providing training primarily for employment in industries and plants characterized by modest scales of operation, rather than those in which most of the training-within-industry occurs.

Summing up the picture revealed by Table 2-3, among boys 61 per cent entered full-time and 9 per cent entered part-time upper secondary schooling.[1] Adding together all those reporting any sort of study or training, we account for four fifths of the boys and girls coming out of 9th grade. Or to put this another way, as of 1963 one fifth report no further training or schooling immediately after completion of 9th grade, one fifth are studying or receiving training part-time, usually while working, and three fifths are continuing in full-time schooling. This latter proportion is continuing to rise, with a parallel decline in the other proportions.

The next most important transition point in the schooling sequence and the decision (or opportunity) to continue with education or to enter the labor market is of course at completion of upper secondary school. Here, with entry to higher education, we find both persistence of strong features of the past and a very substantial set of changes. As before graduates of the academic general courses of the upper secondary schools, joined by a few from other tracks,

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[1]Of the latter, two per cent were receiving training of other kinds as well.

compete for entrance to higher education on examinations set by individual institutions. Also, the elaborate system of first schools that existed in pre-war Japan has persisted. But the number and diversity in quality of universities has increased substantially. In the process of streamlining the system to a 6-3-3-4 model, many previous "higher schools" and institutes were upgraded to the 4 year level, and new prefectural universities have been established. At the same time the great national Imperial universities have increased their enrolments. Undergraduate enrolments in Japanese universities reached 300,000 by 1951 and a million by 1966.

The other side of the reorganization that made 4-year colleges out of many pre-war higher schools and institutes was the near-elimination of programs at a Junior College level so far as men are concerned. The "Junior Colleges" today are predominantly instituions for girls, who make up four-fifths of their enrolments. (The various "miscellaneous schools," which serve both lower- and upper-secondary graduates, are also predominantly female.)

More recently, a significant move back toward a European rather than an American system has taken place. This is the creation of five-year "technical junior colleges," which overlap the three-year senior-secondary school and the first two college years. Examinations for entry to these schools are difficult ones, and quite a few who fail those examinations enter the technical or the academic senior-secondary

courses. On the other hand, the technical-junior-college curriculum is terminal in that graduates from these schools can transfer to universities only with great difficulty, if at all. Some of the technical junior colleges are municipal institutions, which were the first to be established. Even the oldest of the nationally supported and controlled technical junior colleges were just turning out their first graduates in 1966, and whether these colleges would become firmly established and enlarge their place in the system was still uncertain and hence a sensitive point politically. There can be no doubt of the importance of this option in the thinking of many of the senior-secondary-school students included in our samples.

The Japanese educational system is a mixture of public and private institutions (Table 2-4). Private schools account for the majority of students at the lower and upper ends of the system and in the largely-female "miscellaneous schools" and junior colleges. In the elementary grades (1-6) only 5 out of a thousand pupils attend private schools, though the figure rises to 3 per cent in the lower-secondary years. Most of the private schools at the lower secondary level are relatively small and pupil-teacher ratios are high; these schools are usually tied into the prestige sequences of "first schools" in the private sector, paralleling and feeding into the "first-school" sequences associated with the great national or Imperial universities. The new technical colleges ("technical junior colleges"

TABLE 2-4

PUBLIC-PRIVATE DISTRIBUTIONS OF SCHOOLS, TEACHERS AND STUDENTS BY LEVELS AND MAJOR TYPES, 1966

	Kinder-gartens	Elementary Schools	Lower Secondary Schools	Upper Secondary Schools Full-time	Upper Secondary Schools Part-time	Technical Colleges	Junior Colleges	Universities	Miscellaneous Schools
Number and Distribution of Schools									
Total: Number	9,081	25,687	11,851	4,059	2,091	54	413	346	7,897
Per Cent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Percentage Distribution									
Public: National	0.4	0.3	0.6	0.6	--	79.6	5.8	21.4	0.8
Prefectural	0.2	--	--	65.3	77.1	5.6	7.0	7.5	1.3
Municipal	36.3	99.1	94.2	5.0	14.4	1.8	2.4	3.2	1.8
Private	63.1	0.6	5.2	29.1	8.5	13.0	84.8	67.9	96.1
Number and Distribution of Teachers									
Total: Number (thous.)	55.2	349.6	244.5	201.3	27.7	2.9	24.5	93.2	93.4
Per Cent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Percentage Distribution									
Public	26.2	99.2	94.4	67.6	93.3	84.0	13.8	50.0	8.0
Private	73.8	0.8	5.6	32.4	6.7	16.0	86.2	50.0	92.0
Number and Distribution of Students[a]									
Total: Number (thous.)	1,222	9,584	5,556	4,480	507	29	195	1,044	1,443
Per Cent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Percentage Distribution									
Public	26.1	99.5	97.1	65.2	93.1	82.4	11.8	28.6	1.6
Private	73.9	0.5	2.9	34.8	6.9	17.6	88.2	71.4	98.4

Source: Japan Ministry of Education, Basic School Statistics, 1966. (Branch schools are counted as separate units.)

[a]According to the Central Council for Education of the Ministry of Education, Interim Report on Fundamental Policies for the Overall Expansion and Development of School Education in the Future (June 30, 1969), the proportions of graduates who were from private schools in 1954 and 1967, respectively, were: Upper Secondary pupils 18% and 33%; Junior Colleges 84% and 90%; Universities 48% and 72%.

for the most part) are predominantly public national institutions, although, as already remarked, the first of these schools were established under municipal auspices. Among the upper secondary schools, public institutions account for approximately two thirds of the schools, the teachers, and the pupils.

Private schools at the upper secondary level are almost wholly urban. They are extremely diverse in quality. There are of course the renowned, highly elitist private institutions--the Etons and Grotons of Japan. At the other extreme, some of the private upper secondary schools take in urban pupils who have not succeeded in the competition for places in the public upper-secondary system, and those of the urban general upper-secondary schools that enrol the largest proportions in the non-academic general courses are probably private.

School Types and the Study Sample

It is appropriate to digress briefly at this point to remark on features of the study sample particularly relevant to the topics just discussed. Our sample of schools and their students was limited in three major respects: geographic representation (discussed later in this chapter) is selective, the private upper secondary schools were excluded, and we were unable to carry out initial plans to include students in the technical junior colleges.[1] The geographic

[1]For more detailed information concerning the sample, see Appendix D.

limitations and the omissions of private upper secondary schools were due to the inevitable constraints on funds available to defray the costs of gathering the data. Omission of the technical junior colleges was a different matter.

Given the extreme diversity of the private schools, only a very large sample of schools would have sufficed for study of schools taken as the units of observation; and to sample students directly, going to large numbers of schools but including few students per school would have been almost as costly as full coverage of students in those same schools. This just was not feasible. But with a small sample of schools that included those from the extremely heterogeneous private sector our results would have been wildly unreliable. It was decided, therefore, that the sample would have to be limited to schools in the public system. This left us still with a complex set of critical dimensions in school types and student bodies. What we did in fact was to select certain urban and rural areas within which we took stratified samples of general, technical, commercial and agricultural or "combined" schools. The stratification ensured adequate representation of schools and pupils in curricula other than the numerically preponderant "general" programs (see Table 2-1). Sample proportions in the General B and General A courses were not pre-determined, however; these proportions were only known after collecting data from the general schools. "Adjusted samples" of students have been taken

from the initial sample by systematic random numbers methods when the question at hand called for an approximation to the actual instead of the stratified distribution of full-time students among curricula for all Japan.

Initially it had been our hope and expectation that a special and important part of the research would be concerned with students in the new technical junior colleges--in this case both public and private. We proceeded accordingly to develop and print the interview-questionnaires for students in these schools, paralleling those for students in the upper secondary schools, and we obtained the whole-hearted cooperation of principals of some of these schools. However, in the middle of this process certain influential principals seem to have become alarmed, and they organized in opposition to the endeavor. Apparently there was a fear that results of the study might be used to assess the efficacy of the technical junior college programs and subsequently to cast some schools in a less than favorable light relative to other schools or types of schools. This fear was misplaced; indeed such evidence as we have could be interpreted quite the other way. But plans to include students of technical junior colleges had, nevertheless, to be abandoned. This omission is not due to any underestimation by the authors of the importance of these institutions.

II. Educational Expansion and the Educational Composition of the Japanese Labor Force

There are two related, but nevertheless quite distinctive, ways of looking at growth in the education of a population. One is to examine enrolment and school-continuation rates among successive cohorts in the history of the nation and on up to the present. The other is to analyze the educational composition of the labor force. The former will of course always lead the latter, since it is only as successive cohorts of better educated youth join the labor force and the older, less educated persons retire that expansion of education comes to be reflected in a rising "quality of labor." Thus as early as 1905 an estimated 96 per cent of Japanese children of primary-school age were enrolled in school, even though 60 per cent of the Japanese labor force of 1910 is recorded as lacking any formal schooling whatsoever.[1] By the same token, it is obvious that the ground was already laid for the period of rapid change in Japanese society and economy that ensued, sustained through two world wars. At the next stage we find the acceleration of attendance at middle and secondary schools, which has undergirded, though it cannot "explain," the fantastic acceleration of economic progress in Japan over the past two decades. A complex set of interactive processes has of course been involved. In these

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[1] Some unknown fraction of these had learned to use the abacus, however.

background remarks, however, it must suffice merely to sketch in the general pattern of human resource development through schooling as it has evolved over time.

Enrolment Rates in Time Perspective

Rough estimates of enrolment rates at primary, secondary and higher levels of education over the years 1875 to 1965 are presented in Table 2-5. The rapid attainment of universal attendance in primary school has already been remarked; over the thirty years from 1875 to 1905, estimated primary-school enrolment rates jumped from 35 to 96 per cent of the primary-age children. Even if the figure for 1875 is an understatement (which almost certainly is the case), the progress in primary education in the first generation after the Meiji restoration was dramatic.

Secondary education began to pick up only as primary schooling approached universality, even though the figures for junior-secondary or lower middle schools are counted with "secondary" in Table 2-5. It is of course the inclusion of the lower-secondary years (the last three years of compulsory education) that explains the 1947 enrolment ratio of 61.7 per cent for "secondary-school" pupils entered in this table. In fact the proportion of graduates from the lower-secondary schools who entered the upper-secondary institutions were 45 per cent in 1950, and 54 per cent in 1955, rising to two-thirds (when we count part-time students) for 1963; again counting part-time

TABLE 2-5

HISTORICAL TRENDS IN ENROLMENT RATES, 1875-1965

	Elementary Education	Middle Education	Higher Education
1875	35.2%	0.7%	0.4%
1885	49.6	0.8	0.4
1895	61.2	1.1	0.3
1905	95.6	4.3	0.9
1915	98.5	19.9	1.0
1925	99.4	32.3	2.5
1935	99.6	39.7	3.0
1947	99.8	61.7*	5.8
1955	99.8	78.0*	8.8
1965	99.8	86.2*	14.6

Sources: Japan, Ministry of Education. Japan's Growth and Education, 1963; Report on Basic Statistics, 1966.

*Includes "lower secondary" schools.

students this figure now exceeds 75 per cent. The generation reversal between the age cohort of fathers of today's upper-secondary students and the age cohort of those students is clear-cut; seventy per cent of the national population in the modal age group for the fathers of secondary-school seniors of 1966 had completed no more than elementary education. Moreover, since in Japan entry into full-time senior secondary school virtually ensures completion,[1]

[1]We estimated that of all students entering upper-secondary

approximately three-fifths of the cohort graduating from 9th grade in 1963 were graduating from senior secondary school in 1966; the proportion is already pushing past 70 per cent at the present writing. By world standards, Japan's performance is truly notable. Japan ranks second only to the United States in the percentage of its youth who graduate from upper-secondary schools, and if present trends continue, with the negligible Japanese drop-out rates, Japan will shortly match or even surpass the proportions for the United States.

A necessary condition of the high 12th grade completion rate in Japan is of course the openness of most of the system and the regular promotion policy. Although the elaborate system of examinations and the prestige linkages of the "first schools" hierarchies cream off a favored minority, the vast majority of youth continue through to graduation from schools--public or private, academic and general or vocational--that serve a wide spectrum of the population. But whatever may be said about the necessary condition of an essentially open structure and promotion policy between examination points, this is still not a sufficient explanation for the astounding performance of the Japanese in retention of their upper secondary

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schools in 1963, 97 per cent of the males and 99 per cent of the females were graduating three years later, in 1966. (The estimates are based on data from the annual Basic Statistics published by the Ministry of Education.)

school students to successful completion of the course. No other country can come anywhere near to such a performance. The only places where retention rates to completion of such a sequence approximate the Japanese record are where senior-secondary-school pupils constitute a tiny elite--as they do, for example, in Spain.

In Japan, it goes without saying, the senior secondary schools stand on their own; they are not merely appendages of or feeders into the universities. Only a minority of their graduates continue into higher education. Nevertheless, cohort proportions entering the colleges and universities have risen with great rapidity over the past ten to fifteen years, as the last column of Table 2-5 shows--and as the big increase in numbers of college students, cited earlier, implied.

The Changing Educational Composition of the Labor Force

The phasing over the past half century or more in the developing educational composition of the Japanese labor force is summarized in Table 2-6. Proportions lacking any education dropped in a period of two decades from 60 per cent in 1910 to 20 per cent in 1930, and virtually none remained by 1960. Those who had completed middle or senior secondary school constituted only 5 per cent of the 1930 labor force, but over a quarter of the labor force of 1960. Proportions with higher education (either at junior college or university level) have also risen since 1930, but lagging a generation or more behind the

real take-off at the middle levels of the system. As in other countries, there is of course a consequent disproportionate concentration of the better educated in the younger age brackets, a situation that has been particularly important in recent years in Japan because of its co-incidence with the strongly established seniority structures of the "life-commitment" system on the one hand, the rapid pace of technological change and economic expansion on the other. The youthfulness

TABLE 2-6

EDUCATIONAL COMPOSITION OF THE JAPANESE LABOR FORCE, 1910, 1930 AND 1960

	1910	1930	1960
Total Labor Force (thousands)	23639	27991	43691
Percentage Distribution:			
Total	100.0	100.0	100.0
a. Higher education	0.5	2.1	6.8
b. Middle education	1.3	5.2	26.8
c. Elementary education	37.8	72.4	65.5
d. No education	60.4	20.3	0.9

Source: Watanabe, Tsunehiko, Economic Development and Cultural Change, XIII, No. 3 (April, 1965), 293-312.

of Japanese leadership within the formal bounds of a strong seniority system is one of the important paradoxes of contemporary economic development in that country, especially with respect to the roles of

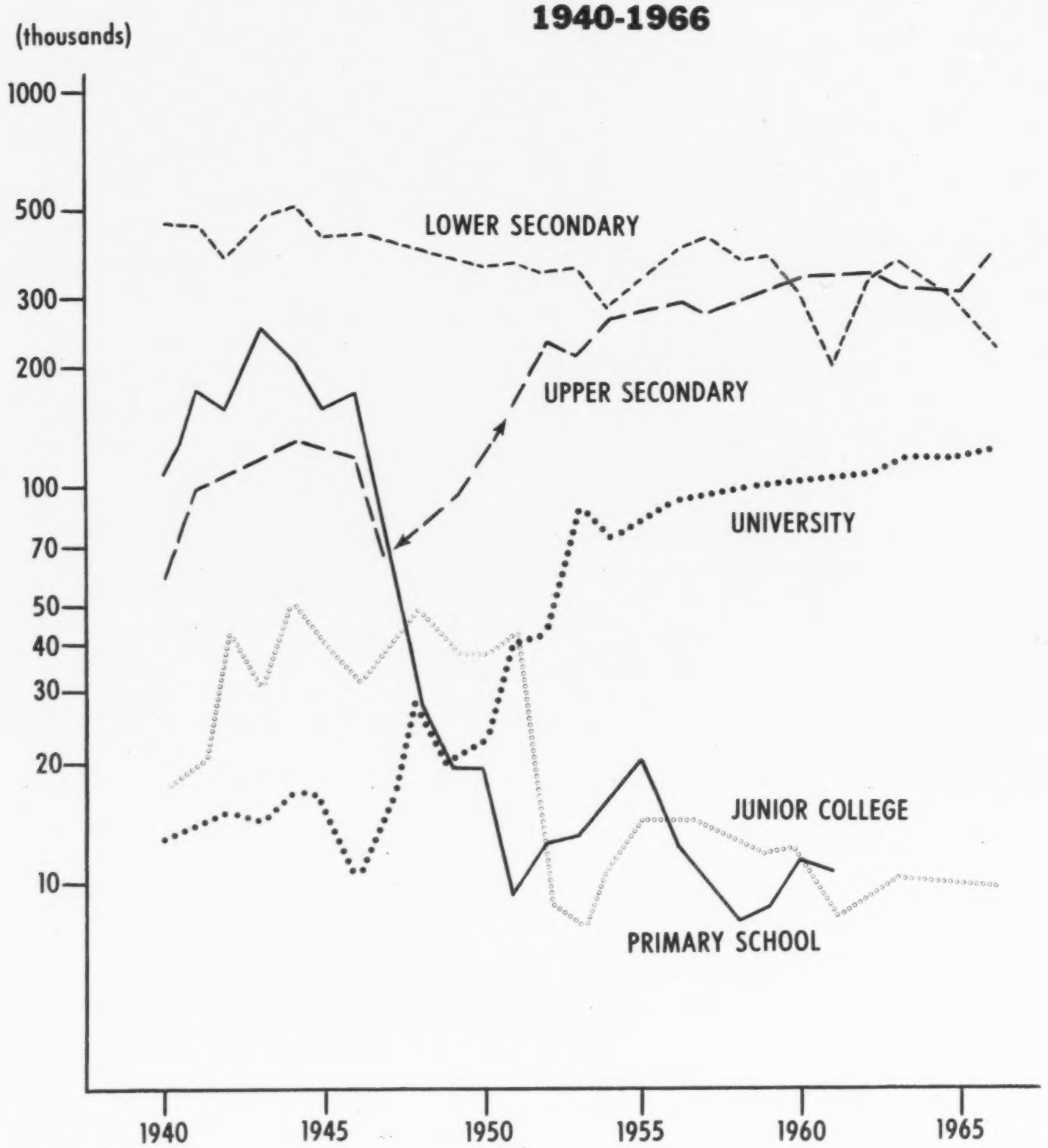
university graduates in the labor force. But these subtleties aside (they are difficult to pin down), one thing at least is abundantly clear. The truly massive scale of education at the upper-secondary levels is altering relationships between schooling and learning at work in non-reversible and important ways.

The cutting edge of change in the educational composition of the labor force and the dynamics of the educational system are both revealed most clearly by looking at characteristics of labor force entrants. Accordingly, in Figure 2-1 we have charted estimates of numbers of male entrants to the labor force by year of entry and education over the period 1940-66. The sharp drop in entrants directly from primary school after World War II reflects the enforcement of the new 9-year compulsory system (inclusive of the lower secondary schools). Also reflecting post-war reorganization of the educational system are the sudden decline after 1951 in numbers coming into the labor market from junior colleges, and the rapidly rising numbers and proportions who had continued through four years or more of higher education before seeking full-time employment. After 1953 the pattern stabilized, with more gradual rates of increase in the ranks of upper-secondary and university graduates; by 1965 the upper-secondary graduates had overtaken those entering the labor market with less schooling, and proportions who have not completed upper-secondary school (or better) have continued to decline sharply in the

Fig. 2-1

ESTIMATED MALE ENTRANTS TO THE JAPANESE LABOR FORCE BY SCHOOL COMPLETION LEVELS

1940-1966



five years since. This shift is tremendously important for the career prospects of youth with the various levels of schooling attainments--and also, by the same token, for recruitment options and for training and promotion policies on the part of employers.

III. The School Samples in Geographic Perspective

No matter where we look in Japan today, north or south, east or west, among rich or poor, city dwellers or people of the countryside, there is virtually no one who does not complete the full primary and junior-secondary schooling sequence. Even among adults, men with less than eight years of education are rare indeed. There is no room for geographic variability in so universal a behavior. But situations with respect to continuation beyond the compulsory levels of school, and men's subsequent careers (and perceptions of career prospects) are a different matter. It would be surprising indeed if Japan did not conform in some degree at least to patterns that seem to be very nearly universal elsewhere in the world. We should expect that where incomes are higher, where the subsequent career effects of additional schooling are more immediately visible, where the locally available schooling options are widest and richest, young people would continue further in school and entertain more ambitions and more metropolitan career aspirations than would the youth of poor and remote areas.

There is in fact a considerable range among prefectures in rates of entry into upper-secondary schools among the graduates of the ninth grade, and those continuation rates are unambiguously associated with the degree of urbanization of a prefecture, its per capita income, and its nearness to or remoteness from the major industrial-urban connurbations. Just how widely these proportions ranged for the cohort of our study is easily illustrated. At the top, 1963 prefectural rates of entry to upper secondary school among the local graduates of the lower secondary sequence were 84 per cent in Tokyo, 76 per cent in Osaka, and 75 per cent in Kanagawa (Yokohama). These were and are the top ranking prefectures in industrialization, *with the densest urban concentrations. Corresponding figures for the* three lowest-ranking prefectures on per capita incomes were 57 per cent continuing into upper secondary school in Kogoshima, 53 per cent in Iwate, and 48 per cent in Miyazaki.[1] Two of these prefectures are located on the Southern shore of the island of Kyushu; Iwate is one of the agricultural prefectures of northern Honshu, in the most remote and backward part of Japan's main island. The distribution of prefectures by quintiles on rates of continuation into secondary school is shown in Figure 2-2. It is only toward the extremes, however, that the prefectural data give a reasonably good picture of the situation.

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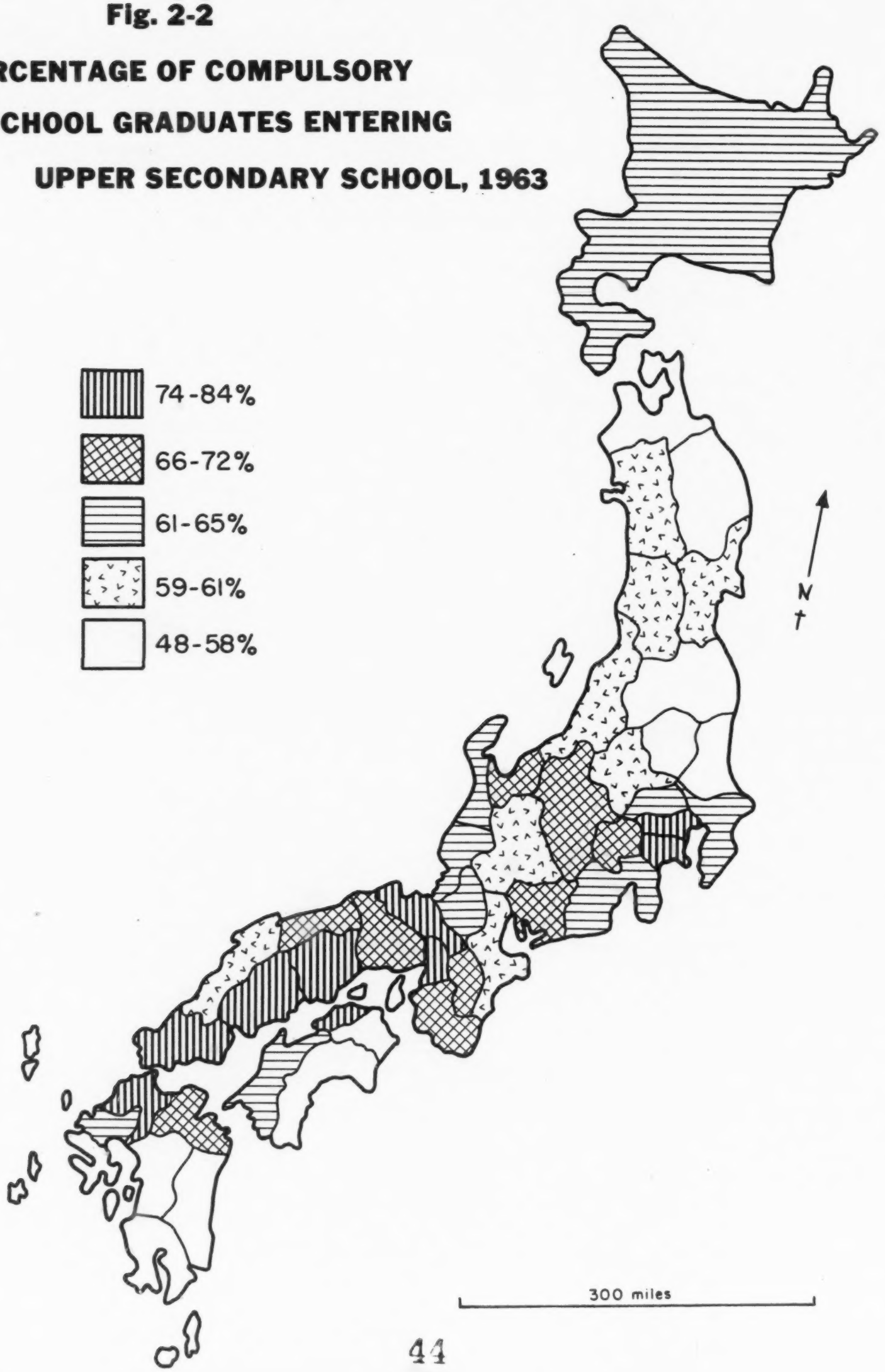
[1]The range as of 1968 was from a low of 59 per cent in Amori (at the northern tip of Honshu) to 92 per cent in Tokyo.

Fig. 2-2

PERCENTAGE OF COMPULSORY SCHOOL GRADUATES ENTERING UPPER SECONDARY SCHOOL, 1963



For the prefecture, like the state in the United States, is an artificial unit; where the population of the prefecture is very heterogeneous in its degree of urbanism, there may be a considerable internal variability by location in rates of continuation into upper secondary schools.

Separately and jointly the authors of this study have been interested in investigating one or another aspect of the ecology of educational developments, including migration to jobs or further schooling. However, here we confine our remarks to general background information concerning Japanese social-economic geography in relation to the geographic selection of the school samples for the present study.

It is clear enough that in a study of the role of upper-secondary schooling in the vocational preparation of Japanese youth it was essential that the study sample include students enrolled in each of the major courses of study; this hardly needs further comment. But we deemed it important also, especially in considering the occupational expectations of upper-secondary school graduates, to include students (in the different courses of study) from a number of communities differing in the occupational make-up of their working populations. For much the same reason, that of controlling for differential "visibility" of various occupations and its effects upon aspirations of youth, remoteness from or accessibility to urban areas of different sizes was considered important. Equally important may be the greater costs and financial impediments to pursuing advanced studies

for youth in poor and isolated areas. It was with such considerations in mind that we selected the urban and rural areas in which to take schools for our sample.

In the autumn of 1966, samples of over 10,000 students in the senior year of upper-secondary school (together with a matched sample of their fathers and of fathers of 7,000 second-graders in the primary schools) were chosen from five urban and four rural areas of Japan. The urban areas sampled were Fukuoka in northern Kyushu, Hiroshima in southwestern Honshu on the Inland Sea of Seto, Tokushima in eastern Shikoku, Osaka at the northeastern end of the Inland Sea, and Tokyo at the head of the Kanto Plain. For each urban area with the exception of Fukuoka, rural hinterland areas were sampled; these four rural samples were taken, respectively, in Hiroshima Prefecture, in three of the four prefectures on the island of Shikoku (excluding Kagawa Prefecture), in Wakayama Prefecture (south of Osaka), and in Tochigi Prefecture, at the northern edge of the Kanto Plain.

Brief inspection of the map in Figures 2-3 and 2-4 will reveal that four of the five sampled urban areas lie along Japan's industrial belt, which runs from Tokyo in the east through Nagoya to Osaka at the head of the Inland Sea and on westward in northern Kyushu. The smallest urban area selected, the city of Tokushima (with a population of 190,000 in 1966), is situated on the eastern end of the island of Shikoku, across the Inland Sea from Osaka. The extent of industrial

Fig. 2-3

LOCATION OF SAMPLE

Regional boundaries

Prefecture boundaries

URBAN SAMPLE

RURAL SAMPLE

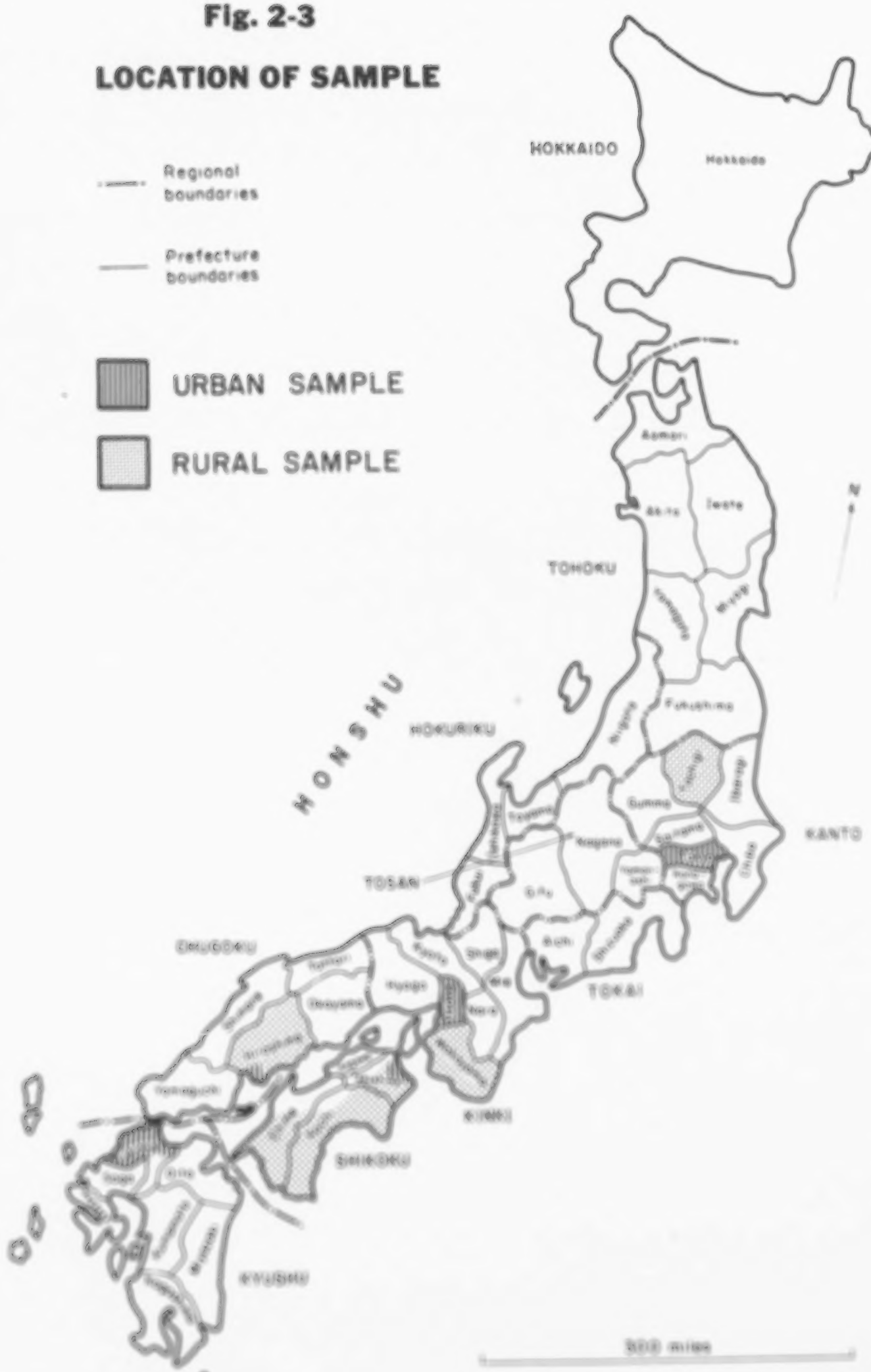
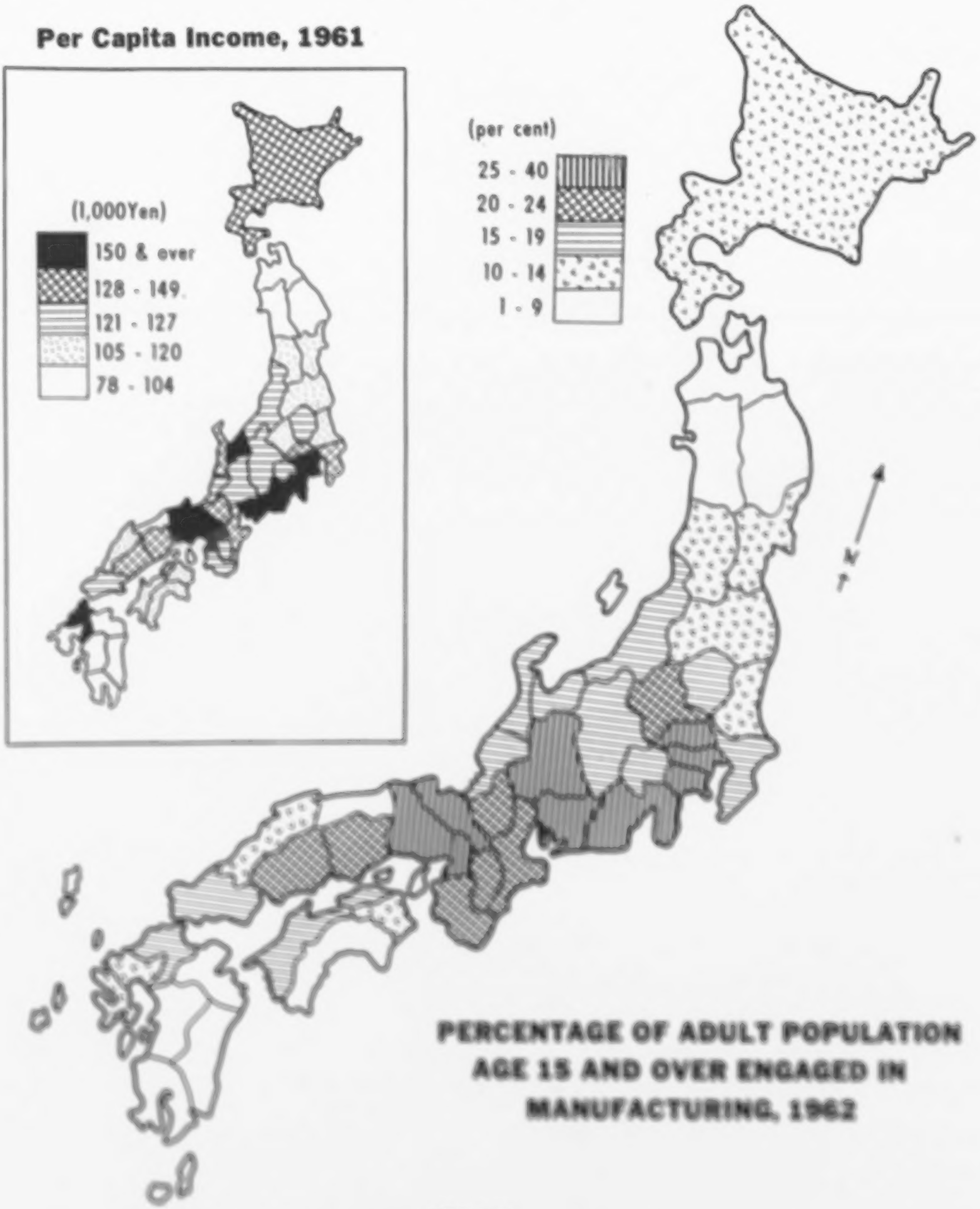


Fig. 2-4



PERCENTAGE OF ADULT POPULATION AGE 15 AND OVER ENGAGED IN MANUFACTURING, 1962

concentration on Honshu's "sunny side" between the Kanto Plain and northern Kyushu, and how far the urban industrial centers dominated the economies of their prefectures, is indicated in Figure 3-4, which shows (in the larger map) the quintile rankings of prefectures by percentages of the population aged 15 and over who were engaged in manufacturing in 1962. The insert map shows the associated distribution of per capita incomes. Among the areas in which we worked the only important difference between these two maps is for northern Kyushu, which rates in the top quintile with respect to income level but only in the middle on manufacturing; this reflects the relative importance of mining and heavy industry in Fukuoka and its environs. The Osaka-Kobe area and the Tokyo-Yokohama-Nagoya strip are of course in the top quintile on both measures. Only Tokushima among the urban centers sampled falls outside the first two quintiles on both per capita income and proportions engaged in manufacturing.

While major silk producing centers, iron works and scattered urban centers serving agriculture and fishing exist outside the industrial belt, 80 per cent of Japanese industrial output can be attributed to four major centers within it. Each of the four is associated with a large city, three of which are in our sample: Fukuoka, largest city of the heavy industry and mining center of Japan (in northern Kyushu); Osaka, a major overseas port and a manufacturing center with some heavy industry; and Tokyo--political, commercial, and industrial hub

of Japan. Tokyo alone accounts for over 30 per cent of Japanese industrial output and with nearby Yokohama is one of the major overseas port cities in Japan. Not included in the study sample is the fourth major industrial mode of Japan, center of light industry and the only major center where the textile industry is of primary importance.

Tokyo, Osaka and Fukuoka are all metropolitan centers of over one million population. Hiroshima city, the smallest of the major urban centers sampled in our study, had a population of approximately 450,000 in 1966 and ranks as part of the second tier of industrial, metropolitan areas in Japan. Hiroshima is a major market center and the most important manufacturing city between Kobe-Osaka and northern Kyushu. Tokushima city is a prefectural capital and a local market town, undistinguished as a manufacturing center.

Of the industrial metropolitan centers sampled for this research, Fukuoka differs from the other three in its less cosmopolitan population. Not a major overseas port of the character of Osaka or Tokyo, and remote in relation to central Honshu and the nation's capital, Fukuoka draws most of its working population from the surrounding agricultural and mining areas of central Kyushu. It is for this urban center that no rural hinterland sample was collected.

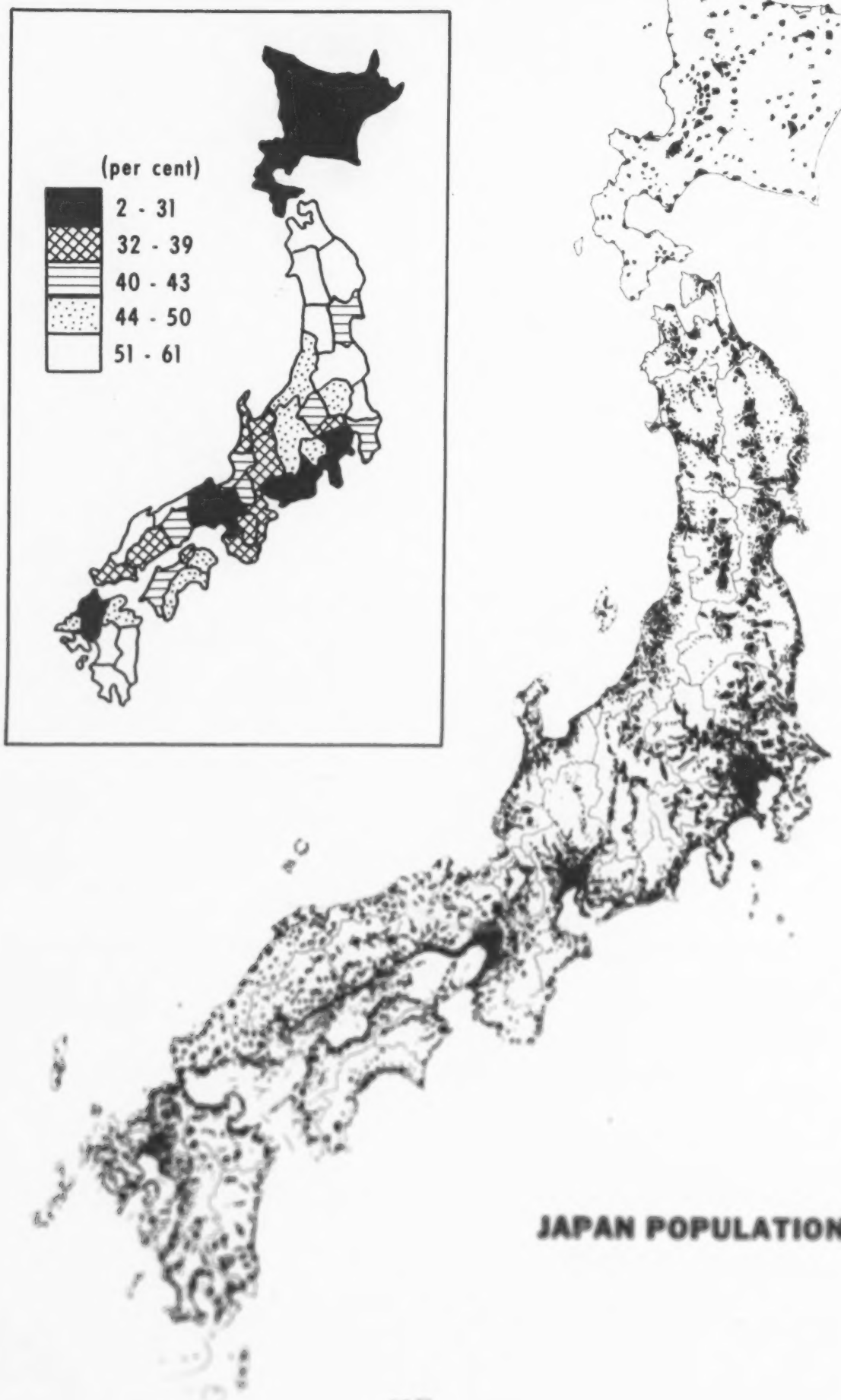
To encompass the full gamut on a scale from urbanism to maximal isolation of "rural" communities in Japan, we should ideally have included localities in the northern part of the main island of

Honshu and in southern Kyushu. (Hokkaido is different yet again, but not as a result of poverty or cultural-economic remoteness.) However, an extension of the rural samples to these areas was not feasible within our time and financial constraints. Nor is it necessary to go that far afield to pick up at least some measure of the contrasts we wanted to explore in examining effects of rural nearness to or remoteness from urban life on career options and labor market perceptions of Japanese youth. As the large map in Figure 2-5 shows, population density is extreme along the Honshu industrial belt, with its heavily traveled express and super-express railways and its growing air traffic and road networks. But as that map illustrates equally clearly, settlement is sparse among the rugged mountains of the interior of Honshu and southern Kyushu. The association between relative sparsity of population and a predominance of employment in agriculture, forestry and fishing is evident in a comparison of the population distribution with the insert map of Figure 2-5.

We attempted to get some basis for analysis of effects of centrality versus comparative isolation by careful selection of rural areas within the unavoidable constraints already mentioned. These considerations dictated both the prefectures used in the rural sample and the locations within those prefectures. Thus southern Shikoku and Tochigi prefecture have little manufacturing, they were in the lowest quintile in rates of entry to upper secondary schools, and they

Fig. 2-5

Percentage of Adult Population Age 15 and Over Engaged in Agriculture and Forestry, 1962



JAPAN POPULATION

rank comparatively high (though not in the top quintile) in proportions in agriculture. Hiroshima Prefecture extends over a wide area, and we included locations back in the hills, up against the "shady side," in our rural samples from that prefecture. In fact these were the most remote communities in the study, despite the fact that Hiroshima Prefecture as a whole has moderately high proportions engaged in manufacturing (in Hiroshima City and in one or two smaller places on the shore of the Inland Sea). Wakayama Prefecture, like Hiroshima, occupies an intermediate position in both the industrial and agricultural rankings; although it is primarily a rural agricultural prefecture, its northern boundary is against Osaka and Wakayama incorporates some spill-over from Osaka urban sprawl. Southern Wakayama remains distinctly rural, however--sufficiently so that interviewers are unhappy about taking the time to get there. In choosing the rural sample, commuter suburbs ("bedroom towns") of the urban centers were avoided, and all four rural areas sampled for upper-secondary schools incorporated the most remote along with the more accessible of the rural communities with secondary schools in the prefectures involved.

Later, in analyzing the data, the urban character of an area or the remoteness of its residents from possible influences of large cities and metropolitan labor markets was measured first simply in terms of local population density, but then, more elaborately, by

a set of transportation indices. Derived from detailed train and bus schedules, these indices included: slow and fast (ordinary and super-express) transportation time from origin to nearest city of 50 thousand, 200 thousand, and one million or more; cost of this transportation from each area of origin; and the frequency with which trains and buses traveled. Location on a main or branch railway, or on none, as well as the need to change mode of transportation to reach a large city were also used in constructing a rough alternative remoteness scale--especially useful in distinguishing degrees of remoteness from contact with metropolitan labor markets.

IV. Some Current Issues in Japanese Education

Japan, with the United States, is today in the vanguard of a new phase in the diffusion of education, which is spreading its successes and its concomitant shocks into most of the industrialized nations of the world--launching the era of the "mass elites."[1] And as twenty-five years ago, reform of Japanese education is definitely in the air, but this time instigation comes from within Japan. The debates reflect both what Japan has come to share with other industrialized nations and experiences and traditions that have been distinctively Japanese. Discussions of reform reveal clearly many of

[1]This phrase refers to Bowman, 1970.

the tensions inherent in an honest effort to probe into fundamental educational issues from a vantage point that straddles the distinctively European and American heritages in educational thinking, even setting other uniquely Japanese features of the situation aside. The debates are rich in content and range widely. Here we can do no more than to select a few of the main themes in current policy discussions, grouping them under five headings:

(1) The extension of compulsory education to more years and the closer sequential integration of all segments of the formal school system

(2) Diversification and streamlining of structure and content in upper-secondary education

(3) Functional specialization among institutions of higher education

(4) Problems relating to the "ronin" system, whereby many students seeking entry to institutions of higher education take examinations over again a second year, and often yet again

(5) Redistribution of the costs of education between individuals and government, between public and private institutions, and between levels of government.

Many issues in educational policy today cut across two or more of these five categories, as will become evident enough in the pages to follow. A striking example is the re-examination of selection

procedures and examinations, which has implications penetrating all aspects of the educational system.

(1) Discussions included under the first of these general categories reflect, perhaps more than any others, the continuing expansion and the continuing high value placed on education in Japanese society during the past decade. The rapid pace of technological change and the contemporaneously rising demand by Japanese firms for youth with at least upper-secondary education have stimulated many debates. There is very little talk in Japan (in contrast to continental Europe) about "suitable jobs" for graduates of upper-secondary or higher institutions. There are, however, frequent expressions of concern about the low quality of some college graduates and the waning prospects for increasing numbers of graduates of upper-secondary schools who enter the labor market without specific vocational preparation. (But these matters relate more to categories (2) and (3) of our list.)

Japan has now reached a position in which it is becoming feasible to introduce and to implement compulsory education through age 17 (for most Japanese, through the senior year of upper secondary school, with completion of grade 12). While such action has not yet been taken, it is under serious consideration. At the same time, there has been rising concern about the disparities of access to both nursery schools and pre-school education for children of 4 or 5 years of age, but especially the latter. For disparities at the kindergarten

level can have major implications for the distribution of subsequent schooling and of career prospects. Suggestions that kindergarten attendance should be made compulsory are winning support; at least concrete planning looking toward such a policy is beginning. Critical in this line of thinking is an initiative by the central government in financing kindergartens in selected (presumably disadvantaged) rural and urban communities, along with pressure on local governments to support these new schools.

Meanwhile, there has been considerable discussion about closer integration of the schooling sequence. It is argued that the seventh grade now repeats too much of the sixth and that the tenth grade repeats too much of the ninth, with an associated lack of consistency in curriculum building. The arguments have focused primarily on the linkage of lower and upper secondary sequences, however. Here they seem to reflect primarily a concern for the most able and academically inclined students,[1] although ambivalence in Japanese thought on this matter is evident. It is argued in favor of integration of the lower- and upper-secondary sequences that consolidation of upper- with lower-secondary education has favorable effects on achievement of the lower-secondary pupils and would generally foster more consistency in the curriculum sequence. With the present two

[1] This aspect of the discussions is manifest also in recommendations that would allow or even encourage bright students to skip a grade, whether in the lower or the upper secondary schools. This is a new idea in Japan.

three-year sequences the critical selection examinations are too close together, it is said, leading to excessive concern with examinations and leaving too little time for more leisurely thought and character building. Finally it is argued that "educational measures adapted to the pupils' ability and aptitudes" (that is, their allocation among courses and/or ability streams) cannot be effectively taken "because the results of observation and guidance in the lower secondary school have not been linked with education in the upper secondary school."[1]

This line of argument is consistent with extension of compulsory education to age 17. It might also seem to imply a shift to genuinely comprehensive upper-secondary education--even further than is in fact the practice in the United States; but this inference is questionable. Rather, the arguments just specified reveal very clearly one of the tensions inherent in current policy-making; there is the strain toward clear-cut selection and allocation of students to distinctive tracks at various stages in the educational system, even as there is insistence also on maintenance of opportunity for everyone to shift concentrations and to continue into higher education as his interests and aptitudes may develop. Much less ambiguous in its implications is the reverse argument, against consolidation of the lower and upper secondary schools. There are indeed strong, if not

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[1]Quoted from page 154 of the Interim Report of the Central Council for Education.

overwhelming, pressures to retain the present split between the lower and upper secondary schools and the examinations on transition between them even (and perhaps especially) in the event of extension of compulsory schooling. Appropriate examinations, it is argued, should both stimulate endeavor in the lower secondary years and provide an effective instrument for selection into the various courses at upper-secondary level. It is not clear yet which direction reforms will take, or whether in fact there will be increasing diversity with respect to integration of lower and upper secondary schools--both between urban and rural areas and among schools within the urban setting.

(2) While there is unquestionably a European meritocratic tone in Japanese discussions of upper-secondary reform, there is also a strong fidelity to something like the open-system conceptions more prevalent in the United States. The resolution of these tensions could even lead to development (among other schools) of something more like the "comprehensive school" than is usually realized on the eastern shores of the Pacific.

In Japan, as in Europe, the contemplation of masses of pupils entering the upper secondary schools has raised qualms about what may happen to academic quality. In reaction, there has been a growing expansion of vocational courses or options, both among types of schools and among curricula within schools. Japan is experiencing in a number of ways the ambivalence and tensions inherent in these issues, as are many countries around the world. One recommendation,

of relatively minor pragmatic importance for the upper-secondary system as a whole, is to incorporate the "miscellaneous schools" for students coming out of lower-secondary schools into the upper-secondary system; this would be a natural concomitant of the extension of compulsory education to age 17. A distinctively Japanese aspect of this suggestion is its association with the nostalgic pull back toward further differentiation of education by sex. Thus it is suggested in the Interim Report of the Central Council for Education[1] that there should be further study of "the contents and methods of education aimed at developing different characteristics of men and women respectively." At the same time, although the importance of the existing vocational secondary schools is reaffirmed, proposals to expand them are accompanied by the caveat that the system must be kept flexible, including (as we noted earlier) flexibility of opportunities for individuals to continue into higher education even from non-academic curricula. At the same time, there are plans to introduce short vocational courses for very specific sorts of jobs as part of the General A programs. This last proposal reflects both fears that graduates of General A courses, most of whom enter the labor market directly, will not be qualified for available jobs and the expressed interest in such short courses on the part of small businessmen who have only limited training needs and capabilities.

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[1] Page 6.

Meanwhile, there is a drive to streamline the academic secondary curriculum and the examinations for entry to institutions of higher education, universities in particular. At present a wide range of subjects is covered by the examinations, but many of these subjects are regarded by Japanese educators as irrelevant to the programs in higher education. Furthermore, the concept of the rounded or whole man does not mean, to these educators, a man who along with his academic capabilities has attained every-day practical competencies or inclinations. In line with the emphasis on a tidier linking of education to individual "abilities and aptitudes," purification of the academic stream would separate the General B much more sharply from General A courses and pupils. "The whole man," of very great concern, to be developed in the academic sequence would be distinctively an academic sort of "whole man" who would demonstrate his wholeness on essay rather than multiple-choice examinations. It is argued further, consistently with this conception, that candidates for admission to higher education should be evaluated not only on the basis of examination results but also on the basis of letters of recommendation from school principals and reports of pupils' previous academic work. These suggestions for reform in the academic streams of upper secondary schools thus exemplify a growing distrust of examinations as sole selection criteria and concern about the distorting effects that emphasis on examinations may be exerting

on the educational process. There is widespread determination to raise the quality of academic secondary and of higher learning even in the face of "mass" enrolments.

(3) Ever since the upgrading of many higher schools and institutes to "universities" after World War II, the Japanese have been particularly inclined to scrutinize the quality of higher education. The proliferation of private institutions and their greater rate of expansion in accommodation of students has not lessened this concern, even though some of the private universities are of the highest quality. In part these worries have a nominal rather than a real basis; it is not that initially "high-quality" institutions have deteriorated, but that the spread in quality among today's institutions is so much wider. This is taken for granted in the United States, where a "university" is a very heterogeneous sort of thing; but the United States is unique in this respect with the partial exception of Japan. Also important for understanding present discussions is the fact that most Japanese universities have continued to be highly paternalistic and hierarchical social structures, which epitomize traditionalist relationships. (Moreover, universities are just coming out of a period in which many were brought to a standstill by student protests.) And all these matters aside, there has been extended discussion in Japan concerning how far general education should be carried into the higher levels of the educational system, when professional specialization

should begin. It is against this complex background of thought and events that recommendations for reform of higher education must be seen.

One recent proposal, for example, is to establish "open-door colleges for adults, as a new and potentially important element in the provision of "life-long education." Just how this would be linked into the reformed system of higher schools, or whether it would have such linkages at all, is not yet clear.

Drastic reforms in the structure of higher education have meanwhile been proposed, involving six functionally differentiated types of institutions: Two are a continuation or modification of present institutions while the other four would differentiate existing "universities," to create separate institutions. The six functionally-defined types of higher institutions would be these: (a) junior colleges providing three years of general higher education (mainly, as at present, for women); (b) research institutes which, as today, would exclusively conduct research and train researchers; (c) "general universities," which would be essentially 4-year colleges without graduate departments or research; (d) research universities, with graduate programs but also concentrating primarily on 4-year college education; (e) six-year universities for professional education (medical, legal, and so on); (f) higher technical colleges, providing a five-year course for students after upper secondary education. These reforms, if

carried out, could substantially restructure higher education. It is not at all clear, however, that such reforms would alter the nature or reduce the dimensions of the "ronin" system. This brings us to the fourth of our five topics.

(4) In 1967 a third of all successful applicants to Japanese universities had been ronin for one or more years, as had two fifths of the males entering junior colleges. That system is defended, attacked, and bemoaned in Japan, according to the individual with whom one is talking and the context of the discussion. When everything else is assumed unchanged, the ronin system often is defended on the ground that it democratizes opportunity to enter the preferred institutions--especially for youth coming from non-metropolitan centers and out of other than the "first schools." But it has also been attacked as undemocratic, permitting less able individuals from well-placed families eventually to be "tutored" into prestige institutions and thus attain the Japanese equivalent of an old-style Oxbridge cachet. Both of these seemingly contrary responses are of course associated with the marked status hierarchy among colleges and universities in Japan and with the close linkages between particular institutions and particular employers, both public and private. Current discussions among informed persons in Japan center around the relationship of the "ronin problem" to this educational and employment prestige hierarchy and, at the same time, around the relationship

of the ronin system to the quality of students selected into the various institutions of higher education.

The association between recruitment into promising careers and the ronin arrangement has been recognized fully. Thus, it is pointed out that the tendency of leading employers to recruit almost exclusively from certain universities not only generates "inequality of employment opportunity," but also is "a key factor responsible for the inflexible social appraisal of universities and the intensified competition for admission into a group of universities."[1] On the other hand, little is said out loud, at least, about government's support of this system, and few propose how civil service recruitment policies might be altered. Rather, we find vague statements to the effect that there should be study of policies that would enable each institution of higher education to pursue excellence in accord with its functions and policies that would ensure recruitment into employment according to individual qualification rather than institutional affiliation.

It also has been pointed out frequently that even though ronin students securing admission to the university may finally have attained high marks on the entrance examination, typically they had poorer records both earlier, in upper-secondary school, and later, in the university, than students going directly to university from upper-secondary school. This line of thought leads again to demands for revision of criteria for selection into higher education, with more

[1] Interim Report of the Central Council for Education, page 4.

stress on school records and less on examinations. In accordance with Japanese thinking about suiting the education to the individual (and vice versa),evident also, nevertheless, is persistence of a traditional selection procedure: "guidance" of students in their choices among institutions of higher education (if any) and toward future careers suited to their "abilities and aptitudes"--and in accordance with "manpower requirements" of the economy.

In sum, present discussions concerning the ronin system do not usually attack that system head-on, but among serious students of the situation there is nevertheless a remarkable openness of mind and readiness to make substantial changes. Officialdom, however, is in practice less flexible. But if virtually no one goes so far as to suggest providing just one chance for entry to particular prestige institutions (except by subsequent inter-institutional transfer as in the United States), changes no less significant have been proposed, and the proponents of reform cite the long Japanese history of experimentation and substantial reforms in selection procedures as precedent. It seems highly probable that the ronin system will be modified in the reasonably near future despite some contra-indicative aspects of recent recommendations with respect to the restructuring of higher education.

(5) Looking at other advanced nations, the Japanese have observed that governments have been providing a rising share of the

direct costs of education at all levels. This is the case even in the United States, though the United States and Japan, with by far the highest proportions of each age cohort going through secondary schools and on to universities, take the smallest proportions of university costs out of public funds. In Japan, however, there has been a trend toward individuals' bearing of an increasing proportion of the direct costs of university attendance, a trend that reflects the increased role of private universities in that country and their less heavily subsidized tuition. It has been suggested that this may be undesirable, and the earlier notion that direct costs should be borne in large measure by the direct beneficiaries may be obsolete. There seems to be little real analysis of the implications of this policy but only the feeling that developments in other countries put Japanese policy, somehow, in an unfavorable light. It may be that this international comparison would have been waved aside, however, were it not for concern about the internal contradiction or inequity inherent in the substantially larger proportion of costs paid by students attending private compared with those attending public institutions. This concern, along with the desire to control quality in higher education, to ensure selection by ability, and to diminish locational disparities of access, has found expression in a formula that requires government approval for establishment of a new university,along with plans for substantial central-government financial assistance to approved private colleges,

old or new. This is a policy area that will unquestionably receive increasing attention and in close association with decisions concerning collectively determined place controls versus private-demand determination of the pace and nature of expansion in higher education.

A policy that would ensure public financing for private institutions and reduce the direct costs to individuals could have substantial reverberations back into upper-secondary education. It could also affect students' choices among options for entry into the universities. Many of these effects have not yet been explored. Equally important, changes in policies with respect to central-government control and finance at the upper levels of the educational system constitute only one part, albeit a crucial and dramatic part, of a general tendency for the central government to take increased initiative in the equalization of all educational opportunities. We can see this in the beginnings, at least, of thinking about national policies to bring more opportunity in upper-secondary education to less favored areas and population groups, and in the proposed strategies (noted earlier) for widening access to kindergartens.

It must be evident that suggested and actual shifts of policy such as have been discussed under each of the foregoing five categories could have repercussions of lesser or greater degree on all of the relationships to be discussed in the chapters that follow, at each transition stage in educational and career decisions. However,

some shifts of policy would have particularly important effects on both decision options and the development of human resources for a dynamic on-going economy. Only policy issues with such major potential effects will be taken up hereafter, in discussing either the implications of our research findings or how those findings might be modified in the conditions of the future.

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CHAPTER III

ASSOCIATIONS BETWEEN FAMILY BACKGROUND AND TYPE OF SECONDARY SCHOOL

There are two quite different ways of looking at relationships between family backgrounds and the types of secondary school or curriculum in which youth are enrolled.

The first, which we might call the "recruitment" view, looks from the perspective of the schools and, back of them, the economy. The main questions in this case concern where those who obtain training of one kind rather than another come from--along with who is recruited into upper secondary schooling versus directly into the labor market with the termination of the compulsory-school years. In the literature of manpower planning this constitutes the "demand" perspective, in that it derives from demands for manpower and traces their implications for education.

The second perspective starts from individuals, and how their backgrounds affect their opportunities and choices. This second perspective is associated with the "human-investment" approach to human-resource formation. It is concerned with investments of individuals in themselves, whether those investments are motivated primarily by

effects of education on prospective earning power or by expected non-monetary benefits. Individuals' decisions among educational alternatives open to them constitute the "supply" side of the manpower balance, but since the motivations of individuals with respect to schooling are complex, and include "non-economic" along with "economic" purposes (as the term "economic" is understood in lay circles), the demands of private individuals for schooling have sometimes been designated, rather paradoxically, as the "social demand" for education (in contrast to the derived manpower demand). Family backgrounds condition both the realities and the perceptions of benefits the individual may anticipate from continuance in school and from entry into one rather than another type of school. Backgrounds affect also both the realities and the perceptions of opportunities to gain entry to one or another upper-secondary school or course. Depending upon the particular society with which we are concerned, youth may be highly differentiated in these respects or there may be a comparatively high degree of homogeneity among them, with very little selectivity of entry to upper-secondary school or to one course rather than another.

The plan of this chapter is as follows: Section I looks briefly into some urban/rural contrasts that are most easily discussed in a more or less simultaneous use of both of the major perspectives just summarized. Section II picks up the first perspective, to examine social backgrounds of students in each type of secondary-school course

and to consider variabilities of classroom composition within each course type. Sections III and IV are concerned with the social selectivity theme from the perspective of the students and their families, first in zero order relationships and then with the use of multiple regressions. Section V continues with this orientation, considering student preferences among course types, how far students have realized their priority choices, and what factors may explain differences in this respect. A concluding section brings together the most interesting of our substantive conclusions.

In this chapter, however, with one exception there will be no discussion of relationships between choice of course and data relating to perceptions of implications of that choice for future occupations. Such questions are deferred to later chapters, where we will attempt to disentangle the mutual cause-and-effect relationships between type of upper-secondary school attended, on the one hand, and perspectives with respect to future education and careers, on the other.

I. "Rural" and Urban Schools and Pupils

Whatever the other factors at work, it is evident that the first step in the career sequences outlined in Chapter I--decisions at the termination of lower-secondary school and entry or non-entry to upper-secondary school--will be influenced strongly by the alternatives available locally. These options differ substantially as between the

major urban centers and smaller places. Virtually every part of rural Japan excepting the most remote villages is served by upper-secondary schools offering agricultural and general courses, whether in the same school or separately (the organization of the system differing in this respect from one prefecture to another). On the other hand, the technical upper-secondary schools (and, of course, the technical junior colleges) are located in or immediately adjacent to the large urban centers, which tend also to be the markets in which graduates will find their first jobs. Commercial curricula are also almost, though not quite, an urban monopoly paralleling the inverse, almost complete "rural" monopoly of agricultural courses.

We have put quotation marks around the word "rural" as a warning that schools serving rural areas are in fact located in places that would not be designated as rural in a census, either in the United States or Japan; in fact upper-secondary schools are located in at least fair sized towns even when they serve farming populations. Despite our deliberate sampling of comparatively remote rural places the smallest of the centers in which the sample upper-secondary schools were located had populations of 8,000 to 9,000 people. This is not a matter of sample bias, but rather of settlement patterns and school locations in a country in which the ratios of population to land are extremely high. Indeed, effective ratios are much higher than the overall figures might suggest, as anyone who has flown over Japan will realize. Even

in the most rural areas of the main island of Honshu people live close together, in tight settlements that stretch as fingers up the valleys and along the lower slopes of the mountains. We have gone further, however, to count as rural the places that serve distinctly rural populations, including rural trading centers that go up to more than 50,000 persons. Counted as "urban" in this dichotomy are the cities of Onomichi and Tokushima, with populations of 91,000 and 193,000, respectively, along with the metropolitan centers. Onomichi is on the main railroad line from Osaka to Hiroshima City.

The distribution among course types for urban and for rural students, in the above definition of urban and rural, is shown in Table 3-1. Those estimates are based on our "adjusted sample," which pulled students randomly from each of the four main school or course types to match proportions enrolled in such courses as shown in national statistics. While these estimates cannot be regarded as a valid representation of all Japan (given the nature of our sample), they provide an approximation that is sufficiently good for our purposes. Within the category "General course," the split between academic (B) and non-academic (A), is based on findings of our survey only; that split, though very much emphasized by Japanese colleagues and quite unambiguous to teachers and students, was not available in the national statistics.

The distinctly rural or small-city locations of the agricultural schools (as of their students) and the urban base of the commercial and

TABLE 3-1

COURSE-TYPE PERCENTAGE DISTRIBUTIONS OF STUDENTS IN URBAN AND "RURAL" SCHOOLS[a]

Type of Place	Course Type					Total
	General B (Academic)	General A (Non-Academic)	Agricultural	Commercial	Technical	
Urban	39	3	3	21	33	99
Rural	46	32	19	3	--	100

[a]Sample adjusted to all-Japan distribution of students among course types.

technical institutions are evident in Table 3-1, and call for no further comment. But quite as important as these contrasts may be locational differences in availability of strongly academic as compared with non-academic general curricula, along with the contrasting propensities of urban and rural students to enrol in them. A first striking fact is that so few of the urban students were enrolled in the non-academic general course; only 3 per cent of the urban as against a third of the rural pupils were enrolled in such courses. Turning this around, rural students account for a clear majority of all enrolled in the nonacademic general course even after correcting for the deliberate rural over-representation in our samples.

Looking at figures for General A only, we might be tempted to

infer either that (1) academic curricula were not available in the rural schools, or (2) rural pupils lacked interest in the academic course. However, a comparison of the urban and rural proportions of pupils in the academic curricula must disabuse us of that simplistic notion; the proportions of all rural upper-secondary pupils enroled in General B actually exceeded proportions in General A. In part at least the high rural rate of enrolment in General A curricula clearly reflects the inaccessibility of alternatives for technical and commercial training. Urban students who were least academically inclined had these alternatives available to them.

Neither can we assume that rural schools commonly lack the General B option. Most general schools, both urban and rural, provide options for both a General B and a General A course. However, the richness of the academic offerings varies considerably, as do pressures or inducements within the school environment leading toward or away from academic types of achievement. The distribution of sample rural and urban general schools by proportions of students reporting enrolment in General B course sequences is shown in Table 3-2. Although, as we shall see in Chapter IV, Japanese youth who have studied in curricula other than General B do sometimes aspire and even find a way to enter into some sort of post-secondary full-time education, there can be no question of the association between enrolment in General B curricula and continuation of education into college and university years.

TABLE 3-2

PERCENTAGE DISTRIBUTIONS OF URBAN AND RURAL GENERAL SCHOOLS BY PROPORTIONS ENROLED IN GENERAL B

	Number of Schools	Proportions Enroled in General B						
		Total	90-99	80-89	60-79	40-59	20-39	Under 20
Urban Schools	13	100	69.2	15.4	7.7	-	7.7	-
Rural Schools	14	100	14.3	14.3	28.6	7.1	21.4	14.3

Thus far in these comments on rural/urban contrasts we have used institutionally-based samples, treating as "rural" the pupils in "rural schools," and "urban" those in urban schools. But this does not take into account the possible presence of rural youth in urban schools. (Urban youth in rural schools we may assume to be so highly exceptional as to be ignored.) The stereotype that depicts children of rural parents living in the homes of urban relatives in order to attend a college-preparatory course can be illustrated for particular cases, of course, but our survey indicates that proportions of youth boarding with friends or relatives while attending urban academic courses is very small.

To sum this up, kinds of curricula locally available do indeed constitute one of the important factors distinguishing career sequences among the more remote rural as compared with the urban and the near-urban young people. But the contrast is not primarily in access to college-preparatory courses. It is in part at least a matter of locational

differences in the quality of the General B offerings, though the extent of these differences is not altogether clear. There may seem to be some advantage of the urban over the rural public schools as judged by performance on achievement tests, but how far this is attributable to the schools rather than to the community environment remains an open question in Japan as elsewhere.[1] The unambiguous differences in opportunity lie in access to the "vocational" courses; those courses that are not intended typically to prepare youth for university entrance but rather to teach skills and knowledge useful to youth who seek employment immediately following completion of upper-secondary school. In this realm the urban youth (and rural youth living close to cities) experience a clear advantage in the relative availability of commercial and, especially, of technical curricula among their options.

II. Background Characteristics by Type of Course

That the backgrounds of youth in the various types of upper-secondary schools will differ must be evident from what we have said about locations by type of course. On the other hand, many farm families live within commuting distance of urban centers. Moreover, differentiation in the composition of student bodies takes many other forms and

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[1]Note that what matters in the present context is what is available to the general urban and rural populations. The few special academically elite university-preparatory courses are of course located in urban centers, but these are accessible to a small minority of either urban or rural children, and we may set them aside so far as the bulk of the urban and the rural populations are concerned.

reflects other factors, within rural and within urban communities. In this section we look at the composition of student bodies in the various curricula according to the occupational and educational characteristics of their parents.

Occupations of Fathers

Two summary indicators relating to parental occupation will suffice to provide an overview of the composition of the student bodies; the first is a categorization by occupational status, the second by occupational "type."

Occupations were ranked by status in eight categories, using a modified version of the Duncan occupational status scale.[1] The break between categories 4 and 5 is an important one in that most white-collar jobs are category 4 or above, and most manual jobs are category 5 or lower though there is some overlap. The lowest clerical positions are in category 5 and traders of various types could spread over almost the entire scale; very highly skilled manual workers could rank as high as 4, and technicians and engineers of course go on up the scale. The most difficult group to place were the farmers, most of whom fall in status category 5 on this scale, though a large minority were rated 6 and ordinary farm laborers, like common labor generally, are in category 8.

Several different classifications by type of occupation have been

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[1] A fuller discussion of these occupational status categories and our rationale and procedures in determining status codes is included in Appendix C.

used in this study, but all were developed starting with an hypothesis concerning job-related differences in ways of thinking, perceiving, and behaving that are generally quite independent of position in a vertical status hierarchy. The resulting classification in its most abbreviated and simplified form distinguished four broad types of occupations: (1) white collar; (2) processors (designated FAB, or fabricators, in our tabulations); (3) traders and (4) farmers and others in primary industries (except mining). The white-collar rubric ranges from the scions of business or the top echelons in the national government to the lowliest clerk. If these jobs have anything in common it is that virtually all of them are desk jobs; as a lowest common denominator all are paper pushers. However, we excluded the professional engineers who were counted with the processors. Category (2) thus covers the widest status range of all, from the top-level professional through the skilled craftsman to the semi-skilled operative and the ordinary manual worker. The least common denominator in this category is an involvement in activities that entail three-dimensional perceptual comprehension and usually the handling of material objects. (Finer classifications controlling for status level uphold the validity of the distinction between type categories (1) and (2), as will become apparent at a number of points in this monograph.) Men in the category (3) can range from the street peddler and the small tobacconist to the head of a large department store chain, but the majority are of course small retail proprietors and salesmen. We included service workers, as barbers and the proprietors

and staffs of inns and hotels, in this category. Most of these jobs entail continuous interaction, at one level or another, with the general public. The distinctiveness of category (4)--workers in agriculture, forestry and fishing--hardly needs comment.

The occupational status and type characteristics of fathers of students in each of the five types of upper-secondary schools are summarized in Tables 3-3 and 3-4. In view of what already has been said about the kinds of schools found in rural and in urban areas and about the place of farmers on the occupational status scale, the distinctive distributions for agricultural schools and for non-academic General (A) curricula will be readily understood. Sons of workers in agriculture, forestry and fishing account for three-fourths of the students enroled in agricultural curricula, and the fact that farmers were rated 5 or, less often, 6 on the status scale accounts for the concentrations of agricultural course students in those status categories. The same facts account for the similar, but less extreme, pattern among students in General A courses; almost half of hese students were sons of fathers engaged in agriculture or (much less often) in fishing or forestry, and the bulk of the General A students came from families ranked 5 or 6 on occupational status. The fact that rural youth are found in considerable numbers in the rural General B courses is reflected in Table 3-4 in the sizable proportion (15 per cent) of General B students who were from agricultural (or related) backgrounds. While there is a slight sample bias that may exaggerate this figure, the true value cannot be far

TABLE 3-3

PERCENTAGE DISTRIBUTIONS OF FATHER'S OCCUPATIONAL STATUS BY STUDENT'S COURSE TYPE; INITIAL SAMPLE

Occupational Status Level	Course Type				
	General B	General A	Agriculture	Commercial	Technical
1 (High)	3	1	1	1	2
2	7				
3	22	8	2	9	9
4	16	11	5	14	13
5	15	31	59	28	25
6	14	32	28	21	27
7, 8 (Low)	13	18	16	26	24
Totals: %	100	101	101	100	100
Responses	1636	491	1121	964	2287
NR	188	61	71	80	306
N	1824	552	1192	1044	2593
% NR	10	11	6	8	12

TABLE 3-4

PERCENTAGE DISTRIBUTIONS OF FATHER'S TYPE OF OCCUPATION BY STUDENT'S COURSE TYPE; ADJUSTED SAMPLE[a]

Type of Occupation	General B	General A	Agriculture	Commercial	Technical	All
WC (White Collar)	43	19	10	24	22	26
FAB (Technical Manual)	25	22	11	37	49	27
RET (Traders)	17	13	3	27	17	15
AG (In Primary Industries)	15	45	76	12	13	21
Totals: %	100	99	100	100	101	99
Responses Classified	1625	497	332	624	866	3944
N.R. and n.e.c.	199	55	29	71	154	508
N	1824	552	361	695	1020	4452

[a]Samples for all but the general curricula are reduced to conform to the 1966 distribution of students among course types in Japan. (The initial sample deliberately over-represented the vocational courses.)

from one seventh. Even in the commercial and technical schools, a sixth to a seventh of the students come from farming or fishing homes, but most of the commercial and the technical-course students from agricultural homes were commuting from adjacent farm districts to school in an urban, though not usually a metropolitan, place.

The occupational backgrounds of pupils in the commercial and the technical curricula are quite similar both with respect to status distribution and in proportions from white-collar and from farm homes. The main contrasts are what we might expect; sons of trading families were relatively more frequent in the commercial than in any other type of course, and sons of fathers categorized as processors (FAB) were most frequent in the technical curricula, where they accounted for half the total. As we will see later, the more detailed job characteristics of the fathers in this latter category were quite different for the commercial and technical schools.

Students in General B stand out for their distinctly higher representation of the upper occupational levels and of white-collar men in our four-way classification by occupational type. Indeed, almost a third of the General B students came from homes ranked in levels 1 through 3, as against a maximum of under 12 per cent from such homes among students who were in the commercial and technical streams (and under 3 per cent in the agricultural schools). The excess proportions for General B in fact extend through level 4. Compared with all other types of curriculum, the dramatic under-representation by status level

in the academic-general compared with other curricula was for levels 5 and 6, rather than for the lowest levels of all. This is the more interesting in view of the fact that levels 5 and 6 include virtually all of the General B students from agricultural backgrounds, leaving very few at level 5 or 6 from technical and manual occupations. In fact the spread of status among "FAB" fathers of General B students is extremely wide, from professional engineers to common laborers, but sons of skilled workers find their way into these courses far less often than into the technical streams.

Education of Fathers

The vast majority of Japanese men in the age range of fathers of students in the last year of upper-secondary school were educated through eight years of the old compulsory system, and many attended war-time "youth" schools, but went no further; of all Japanese men aged 40-49 in 1966 the proportion with no regular schooling beyond the compulsory years was 72 per cent.[1] Table 3-5 shows that generally the reported proportions of such fathers in our sample was close to 70 per cent in each of the curricula except the academic-general course, which had a much smaller representation of elementary-school fathers (only 43 per cent). The General B course had a correspondingly higher proportion of students whose parents had gone beyond

TABLE 3-5

PERCENTAGE DISTRIBUTIONS OF FATHER'S EDUCATION BY STUDENT'S COURSE TYPE (INITIAL SAMPLE)

Education Level	General B	General A	Agricul-ture	Commer-cial	Tech-nical
University	12	2	1	2	3
Higher Schools	12	4	3	4	5
Secondary	33	23	22	23	25
Elementary[a]	43	71	74	71	71
Total %	100	100	100	100	100
N	1824	552	1192	1044	2593

[a]Includes all compulsory years, which means eight years for the generation of most fathers but nine years (inclusive of junior secondary school) for the youngest among them.

elementary school, but the contrast with other curricula is especially notable for youth whose fathers had proceeded into the "higher schools" (junior colleges) or universities. In an average classroom from our General B sample, a fourth of the youth will have come from homes in which the father had at least some higher education, whereas the proportions from such backgrounds were only eight per cent in the technical schools (which rated second in this respect) and only four per cent in the agricultural courses. This contrast between students in the academic-general and in other curricula is associated with rates of continuation from General B into university in complex ways, reflecting

both why these students entered General B in the first place and the impact of class-room composition on aspirations of the students, teaching programs per se quite aside. But this is not unique to the educational background traits. Differences in class-room composition with respect to parental occupations (by both type and status) are also compounding factors that will be difficult to separate out in assessments of effects of one versus another curriculum on career perceptions (and of career perceptions on original choice of curriculum).

Variabilities in Class-room Composition

In the above remarks concerning class-room composition, we were referring to differences on-the-average between the social backgrounds of students in one type of curriculum as compared with another. But there are wide variations in the composition of class-rooms within each type of curriculum. A summary of the range covered by our samples, along with a comparison of median values on each measure for rural and for urban courses of each type is provided in Table 3-6. (Note that categories are more narrowly defined than in Table 3-4.) The greatest variability, as might be anticipated, is in the general courses, and especially among rural students enrolled in such courses. Even for this rural sample, the variation is due only in small part to the fact that Table 3-6 does not distinguish between the General B and the General A courses; it is primarily a reflection of differences among the communities from which the students are drawn. For the rural

TABLE 3-6

RANGE IN CLASS-ROOM COMPOSITION BY TYPE OF COURSE; RURAL AND URBAN SAMPLES

	Rural Schools			Urban Schools			
	General (B and A)	Commercial	Agriculture	General (B and A)	Commercial	Technical	Agriculture
Proportions of Students Whose Fathers Were in Designated Types of Occupations							
Agricultural and Related							
Median	43	*	78	3	3	10	*
High	67	48	98	11	21	31	77
Low	15	33	63	0	0	0	69
Retail Trade							
Median	16	*	3	15	26	12	*
High	24	44	11	27	41	22	6
Low	3	18	0	0	12	7	4
Technical (Incl. Engineers) & Skilled Workers							
Median	9	*	6	19	17	33	*
High	18	8	11	40	22	44	9
Low	0	6	0	7	12	25	9
White Collar; narrow definition							
Median	23	*	6	29	19	14	*
High	37	12	11	42	30	18	9
Low	8	11	1	15	11	6	8
Proportions of Students Whose Fathers Had Schooling Beyond Compulsory Level							
Median	40	*	23	54	30	34	*
High	60	28	36	84	39	47	37
Low	18	19	11	24	19	20	21
Proportions of Students Whose Fathers Had Schooling Beyond Upper-Secondary							
Median	12	*	3	23	6	7	*
High	26	2	8	47	17	17	6
Low	2	0	0	6	0	3	3

*Only two schools in this category.

[a]This excludes the semi-skilled and unskilled workers included after "FAB" in preceding tables.

[b]Professional, administrative and clerical exclusive of engineers or technicians and of men in retail trade, and of managers in manufacturing and communication.

schools communities in this context refer to entire towns or villages; for the urban schools this is a matter primarily (though not wholly) of the part of a city in which the school is located.

Considering the rural general courses first, it is important to remember that what we have called "rural" schools were in fact located in communities that range in population from 8,000 to over 50,000 persons. There is room for considerable variation in local occupational structures. It is primarily this occupational variation, associated with size of place, that accounts for the extraordinarily wide range in proportions of rural general-course students who come from agricultural or from white collar backgrounds, and it is in the larger "rural" places that we find sons of technicians and skilled workers accounting for over 10 per cent of the general-course students. Accessibility of the "rural" community to larger urban or metropolitan centers makes very little difference unless youth are within easy commuting distance of such places, in which case they will constitute part of the urban school population. Variations in the educational backgrounds of parents of students in "rural" general-course classes is as striking as the variations in occupational composition, and as consistently associated with size of place.

Returning to Table 3-6, the really dramatic contrast in backgrounds of students in rural and urban general courses is where we should expect to find it; sons of farm people make up 43 per cent of the median student body of rural general schools as compared with only 3 per cent

for the median urban general course. Moreover, even the highest figure for the urban general course is below the lowest figure for the rural. The urban general schools make up for the lack of farmers' sons primarily from the ranks of technical and manual workers, both at the skill levels included in the technicians and skilled category used in Table 3-6 and from the less highly skilled of the processing occupations, although they also enroll more sons of white-collar men. A comparison among types of urban courses in their recruitment of farm children is particularly interesting as it reflects variations in accessibility, and hence reveals the gaps in options available to youth outside of the cities. Regardless of the type of course, the inner-city schools of the metropolis recruit few farmers' sons; when such youth are in urban schools they are normally outside of the huge metropolis, and farmers' sons make up larger proportions in the schools located in non-metropolitan urban areas. But even the urban general course with the largest representation of youth from agricultural homes counted only 11 per cent of farm enrolees, as compared with a median level of 10 per cent in the technical schools and the maximal proportions of 21 per cent and 31 per cent for the urban commercial and technical streams respectively. These alternatives, especially in technical courses, are not available to rural youth in their home communities, and technical schools located in cities draw large proportions of their student bodies from surrounding villages. It is no accident that the largest proportions from agricultural backgrounds in

the non-agricultural urban schools, and in the urban technical streams in particular, were in cities of Shikoku, or that none of the schools of Tokyo or of Osaka drew more than an occasional son of an agricultural family.

Overall the agricultural, and then the commercial schools, have the least diverse student bodies, though their difference from the technical schools in this respect is negligible. Indeed, the generally low representation of white-collar families among the technical students is underlined by this table, which shows the highest proportion from such homes to be only 18 per cent (as compared with 30 per cent for the urban commercial and 42 per cent for the urban general curricula). So far as paternal education is concerned, the students of the commercial and the technical courses are quite similar, though the technical schools hit higher maximum levels in representation of youth whose parents had schooling beyond the compulsory years. Urban general schools are outstanding in proportions of well educated fathers, of course, but even the rural general schools range higher on proportions of better-educated parents than do the urban technical or commercial schools. Especially striking, as previous tabulations should lead us to expect, is the wide range among urban schools in the proportions of General B students whose fathers had college or university training, running from a reported low of 6 per cent to almost half (47 per cent) of the student body.

It is of course among the urban General B courses that we find the highly selective elitist schools of Japan. At the extreme, eighty per cent of the students of a highly elite upper secondary school in Tokyo are sons of college men, most of whom occupy high positions in the national bureaucracy. Indeed, though they account for a very small fraction of upper-secondary students, the most elite schools (which are underrepresented on our sample) are conspicuous because of their key role in allocating youth to the most prestigious universities and into the potentially most prestigious careers. But there are also marked locational differences both in how "elite" a presumptively elite school is, and in how far student selectivity occurs within the General B stream, rather than by allocations of students to one as against another of the main types of curricula. The most elite and prestigious school in Tokushima (included only in a special supplementary sample and not in the above tables) can claim college education for no more than a third of the parents, a proportion reached by the typical General B classrooms in the samples of Hiroshima and Fukuoka public General B streams.[1] On the other hand, in both Tokyo and Osaka there are a

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[1] "Typical" is excluding the most elite of the schools in the samples, but averaging the others. Among students in the most elite Hiroshima upper-secondary school, two fifths were sons of college men, and the most elite of the Fukuoka schools is the one from which we get the 47 per cent maximum figure shown in Table 3-6. Special supplementary samples were taken to obtain information on the backgrounds of students in three presumptively

number of upper-secondary General B streams with much lower proportions of sons of college men, running generally closer to a fifth than to a third of the students. In Hiroshima and Fukuoka, selectivity of recruitment as among curricula is most important, whereas in Tokyo, especially, social selectivity of recruitment among schools within the General B curriculum category becomes a matter of at least equal if not greater significance.

III. Family Background and Destination at the Upper-Secondary School Entry Stage: A Preliminary View

Throughout the last section we were looking at relationships between type of school and family background in the perspective of the schools and class-room composition, asking where students in the various curricula came from and in what proportions. We turn now to ask the reverse question: what are the options perceived and acted upon by youth from different family backgrounds? Our first step will be simply to turn some of the tables the other way around, to examine horizontal distributions, still in zero-order relationships. We will then go on, in Section IV, to apply multiple regressions in the analysis of effects of family background

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elite schools--selected by Japanese colleagues as the most elite in Tokyo, in Osaka, and in Tokushima. There was no reason to do this for Hiroshima or Fukuoka, where there is less variability in selectivity of recruitment to General B streams in one school as against another. For further comments on this and related problems, see Appendix B.

on the likelihood that a young man will go into one or another type of secondary stream.

Selectivity of Entry into Secondary School or the Labor Market

Clearly the first question must be concerned with the chances that a young man with any given family background will enter upper-secondary school at all, and how far those chances differ with family background. Evidence already reported partially answers this question. As was stated in Chapter II, among the 1963 graduates of lower-secondary schools (the cohort of young people we are studying), three-fifths went on to full-time upper-secondary school. If in 1963 we had known nothing about a youth's background, we would have bet roughly three to two that he would go on. (The odds are more like three to one today.)

Knowing that this father did not go beyond elementary school would reduce our estimate of chances somewhat, but not substantially, since (as previously remarked) roughly 72 per cent of the fathers of youth in the relevant cohort had no full-time schooling beyond compulsory levels; in fact using the data from our adjusted sample as a basis of estimation, we concluded that approximately half of the sons of fathers lacking schooling beyond the compulsory years entered upper-secondary school in 1963, as compared with roughly 85 per cent of the sons of fathers who had gone beyond that level. Sons of fathers who had been to upper-

secondary schools were almost as likely to go on as were sons of fathers with university education.

Assuming no differences in numbers of sons of upper-secondary age in the general population per thousand men age 40-49 with each level of schooling, we computed "selectivity ratios" for the entire upper-secondary sample simply by dividing the fathers' distribution of schooling by that for all males aged 40-49. (If parental background of students exactly matched educationally the distributions for all men in the age bracket 40-49, all of these ratios would be 1.00.) The ratios we obtained were:

Sons of university men	1.52
Sons of men with "higher" school, or junior college education	1.43
Sons of men with middle (upper-secondary) schooling	1.41
Sons of men with no full-time schooling beyond compulsory levels	.83

Despite the limitations of our sample when used as the basis for such estimates, there is no reason to suspect any large error in these results. Selectivity of continuation into upper-secondary clearly exists, but the extent of selectivity is impressively moderate.

Matching reported occupation of students' fathers to census reports concerning occupations in the general population is more difficult than for schooling. There are inherent problems in occupational reporting and coding, and in combining the detailed occupational data about fathers of our students into a manageable number of categories, we used classifications that do not match those in

the Japanese population census. After some preliminary explorations, we decided to concentrate on evidence from our urban samples and with respect to representation of the two lowest occupational status groups only. A priori considerations and the evidence concerning under-representation of sons of the least schooled men suggested that we should anticipate under-representation for these lower occupations. Comparisons were made for the particular cities included in our study. Whereas in none of those cities does the proportion of men employed in occupational levels 7 and 8 fall below 22 per cent, in our adjusted sample of secondary-school seniors only one city shows twenty per cent coming from homes of this type: Osaka, with 21 per cent of the fathers of secondary-school seniors in occupational levels 7 and 8 as compared with 26 per cent of the relevant males in the population at large. The differences between sample and census proportions for status 7 and 8 range between 5 and 9 percentage points for all individual cities except Fukuoka, where the difference is 17 points.[1] The figures for Hiroshima, from which city we drew the most representative secondary-school sample, are 24 per cent of the employed male population in statuses 7 and 8 as against 15 per cent for the fathers of upper-secondary youth, a selectivity ratio of .63, which is a distinctly greater under-

[1] Due in part to the effects of coal mining on numbers in lower status occupations.

representation than the ratio .83 cited above for selectivity of sons of the least educated parents. This is hardly surprising; in pushing down to status levels 7 and 8 we are focusing on a distinctly lower level of fathers than that singled out in taking all who lack regular schooling beyond compulsory grades. Even the Osaka ratio, which is biased upward, was just .80 for status 7, 8 representation.

Effects of Parental Backgrounds on Secondary-School Options Chosen: Some Simple Comparisons

Leaving out of our calculations those who enter none of the upper-secondary-streams, we are now ready to ask how youth with various backgrounds sort themselves out among those curricula.

If we regard each type of curriculum as indicative of a type of occupational predisposition, we can interpret the extent to which sons of men in one occupation-type category versus another attend kinds of upper secondary schools that suggest "occupational inheritance" in the very loose and broad sense of a continuity in general type of interest or direction. In Table 3-7 which speaks to this question, we starred entries that exceed randomly expected values by ten percentage points or more, and designated by a d those that fall short by at least ten points and/or that are less than half their statistically predicted values. Also, summary "indexes of differentiation" are shown for each origin in the last column of the table; those indexes specify the proportion of sons of a designated origin

TABLE 3-7

PERCENTAGE DISTRIBUTIONS AMONG COURSE TYPES BY FATHER'S TYPE OF OCCUPATION

	General B	General A	Agri-culture	Com-mercial	Tech-nical	Total %	Total N	Index of Differentiation
White Collar[a]	60*	9	3[d]	13	15	100	827	19
Managers in Mfg. and Construction	61*	6[d]	1[d]	13	19	100	328	21
Traders (4)	41	10	1[d]	26*	22	100	651	10
Artisans in Traditional Trades (5)	37	6[d]	1[d]	28*	28	100	147	17
Engineers & Technicians	50	6[d]	2[d]	13	30	101	331	16
Skilled Workers in Mfg. & Construction	24[d]	9	4[d]	20	43*	100	426	25
Other Manual	28[d]	11	3[d]	22	36*	100	311	20
Agriculture, Fishing and Forestry	26[d]	24*	29*	8	12[d]	99	923	33
NR	41	12	5	13	29	100	492	6
Total	41	12	8	16	23	100	4452[b]	

[a]Professional, managerial and office workers at all levels but exclusive of categories specified below.

[b]Including 16 in miscellaneous types of occupations n.e.c.

who would have to be shifted to match the distribution among courses for all sons.

Youth from agricultural backgrounds are the most clearly differentiated from all others, with an index of differentiation of 33 per cent, attributable to their concentration in the agricultural and General A curricula. As the other side of this same selectivity, along with the decided over-representation of farmers' sons in agricultural curricula goes substantial under-representation of youth from any other origin among the agricultural students. Variations in the distribution of fathers' occupations in General A classes reflect primarily variations of occupational structures among localities.

Sons of men whose occupations were at the same time distinctively urban and high status--most notably sons of managers in manufacturing enterprises and engineers and technicians--were the least likely to take non-academic general courses of study in upper-secondary school, for fairly obvious reasons. Instead, sons of engineers and high-level technicians are found in somewhat more than their expected proportions just where inheritance of a mixture of status background and fathers' type-of-job would lead us to look for them--in the academic-general and the technical curricula. However, the double-edged effect of status and job-type makes the sons of engineers and technicians one of the least differentiated in allocation among types of courses.

The closest in approximation to the average, however, is the distribution of destinations among sons of proprietors and managers in trade and retail services, with an index of differentiation of only 10 per cent. Sons of traders are over-represented in the commercial courses, to be sure, but to a very moderate extent; despite their geographic spread from small towns to metropolis the compensating under-representation for sons of this group was primarily in agricultural courses. In fact the sons of artisans in the traditional trades slightly exceed sons of the retail proprietors and retail service workers in proportion going into the commercial stream.

With the exception of the traditional artisans (who sent exactly the same proportions into technical as into commercial streams), youth from each of the sub-categories previously combined under FAB (including engineers, technicians and all processing workers and manual labor) entered technical schools in substantially greater proportions than they went into any other course except (in some cases) the academic general. Two groups, the sons of skilled workers in heavy industry and construction, and the sons of semi-skilled and unskilled "other manual" workers, were decidedly under-represented (along with sons of farmers) in the General B curriculum. Particularly interesting is the decided preference of sons of skilled workers for the technical course; their over-representation in that course is an exceptionally clear instance of occupational inheritance

in the broad sense. Among youth who continue into upper-secondary school, even sons of "other manual workers" enter the technical stream less often, other streams more often, than do the sons of skilled workers.

We had no way of estimating how a youth's chances of going to some (any) sort of fulltime upper-secondary school would be affected by death or illness of his father. Neither have we any direct evidence as to how secondary-school attendance is affected by parental unemployment or parental income, although occupational type and social status give us clues on these points. However, we do have information concerning the incidence of non-employment among fathers and of proportions of fathers who are deceased. Students in the technical course are the most disadvantaged on both counts; 12 per cent of the fathers of those students were no longer living and over 4 per cent were not working at the time of the study. The smallest proportion with fathers not living (5 per cent) was among students in the agricultural curricula, and the smallest proportion with fathers not working was among students in the commercial course. (The low incidence of non-working fathers among the students in commercial curricula reflects the fact that more fathers of enrollees in that course are self-employed, and suffer neither periodic unemployment nor early automatic retirement.) The most interesting thing that these figures tell us is that if a young man has lost his father and lives in an area in which technical schools

are accessible, the likelihood that he will attend such a course rather than any other type of curriculum is substantially greater than if his father were living. (Parental occupations as classified in all of the tables refer to father's "principal occupation," and include the last occupation of fathers who were no longer living or were not working at the time of the interviews.)

Table 3-8 presents the distribution by course for youth from different occupational-status origins. Immediately evident is the clear and consistent decline in proportions of youth enrolled in the academic general course with decline in occupational status of father; the range is from over nine-tenths in the small top-status category to just over a fourth at status levels 6 through 8. Youth whose fathers are of middle status enter the academic courses more often than they enter any others, but there is a considerable shift between status categories 2 and 3, and then again between 3 and 4 in the proportions who go into technical courses instead of the academic general streams. Rates of entry into technical courses are highest, nevertheless, for youth from homes in status levels 6 through 8. More surprising is the decided jump in proportions of youth attending commercial schools from those in the three status levels 4, 5 and 6 (all around 16 per cent) to those in the lowest status groups (about a fourth).

As we saw earlier, the occupational-status scale discriminates over a fuller range of parental socio-economic status

TABLE 3-8

PERCENTAGE DISTRIBUTIONS AMONG COURSE TYPES BY FATHER'S LEVEL OF OCCUPATION

Occupational Status Level	Course Type					
	General B	General A	Agri-culture	Com-mercial	Tech-nical	Total
1 (High)	91	3		1	5	100
2	79	2	1	8	10	100
3	66	8	1	10	15	100
4	49	10	3	16	22	100
5	35	13	17	16	19	100
6	26	18	11	16	28	99
7, 8	27	13	3	25	32	100

than does parental education, simply because the majority of Japanese men over forty had completed the compulsory schooling levels but had not gone further. Also, we found that schooling differences among fathers who had gone beyond compulsory levels of schooling told us very little about rates of entry into upper-secondary school. However those differences in parental education do relate systematically to types of courses sons will enter (Table 3-9). Thus, as with occupational status, the proportions going into the academic, General B, streams are highest among sons of university men and decline progressively as we go down the scale of parental education, Among the sons of men who had attended middle or upper-secondary

school, half went into the General B curriculum, the rest distributing themselves over the field, but especially into the technical streams. Only thirty per cent of the sons of men without post-compulsory education went into General B. There is a progressive increase of proportions entering each and all of the other types of courses as we move down the scale of parental education, though that progression is somewhat less steep for the technical than for the other streams.

The lower part of Table 3-9 introduces some distinctions not used before, between type of schooling among fathers who attended middle and "higher" schools or institutes (upper-secondary and junior-college in modern terms); these types are arranged in declining order with respect to proportions of sons enrolled in General B courses. The fact that sons of men who attended normal schools are the most likely of all to go into General B courses, but least likely to enter commercial or technical streams, bespeaks the influence of pedagogue fathers on the educational careers of their sons--an influence that may well prevail even when training at a normal school has not been followed by actual teaching. Once again, the inheritance factor comes out with clarity not only for agriculture but also for attendance at commercial courses. Indeed, the distributions of students whose fathers attended agricultural secondary schools suggest more the effects of accessibility than of transmission of interest in agriculture from father to son. The "inheritance" component in interests of youth

TABLE 3-9

PERCENTAGE DISTRIBUTION AMONG COURSE TYPES BY FATHER'S EDUCATION

Level of School Attainment of Father	General B	General A	Agri-culture	Com-mercial	Tech-nical	All
University	77	3	*	5	14	99
Higher Schools	65	7	3	8	16	99
Secondary or "Middle"	50	10	7	13	20	100
Elementary	30	15	10	20	25	100
Type of Secondary or Higher-School Course Attended by Father						
Normal	73	11	3	5	7	99
Academic	67	2	1	11	19	100
Technical	57	7	1	8	27	100
Commercial	53	7	2	18	20	100
Agricultural	41	19	19	8	12	99

*Under 0.5 per cent.

whose fathers had attended technical secondary schools or higher institutes is unambiguous, but so is the stronger pull of the academic general course.

4. Regression Analysis of Background Influences on Type of Course Taken

The Statistical Model

Effects of parental education and of parental occupation on the likelihood that if a youth goes on to upper-secondary school he will enroll in one type of course rather than another have been analyzed in preceding pages taking one parental trait at a time. The simplest summary way of going beyond this, to consider several influences jointly, is of course to use multiple regression analysis. This we have done taking the likelihood of attending each type of course in turn as the dependent variable.[1] Thus, if the dependent variable is enrolment in an academic-general course, for example, individuals in that course will be given a score of 1 on the dependent variable, those in other courses will be scored zero. Overall, the mean value of the dependent variable "academic-general" will be equal to the proportion of all upper-secondary youth who are enrolled in that curriculum.[2] The mean values of the five dependent variables (which

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[1] In effect we are analyzing the partial transition matrix from the background vector V_b of Chapter I into the various types of upper secondary schools, but instead of elaborating the elements of V_b by multiple cross-classifications, we are imposing linearity constraints on the model. Note that while the individual case must be either 1 or 0 on the dependent variable for enrolment in a particular course, the predicted value treated as a probability is a continuous variable.

[2] Since dropouts from upper-secondary courses before completion are negligible in Japan (3 per cent among males nationally), analysis of last-year students is virtually the same as analysis of the first year entrants to this level of school. We are of course using the

exhausts the types of courses) will of course add to 1.00. Our principle interest is in the regression coefficients, or estimates of likelihoods as affected by parental traits, and it is on these coefficients that attention in the following pages will mainly be centered, with only brief consideration to coefficients of determination.

The independent variables have been treated as categorical throughout, even though some (as father's age) were cardinal numbers in their original form and others (as father's occupational status or level of education) could have been treated as if cardinal. The use of categories enables us to dispense with any particular assumption (linear or otherwise) about the mathematical form of relationships between, for example, father's age and son's likelihood of taking an academic-general course. A further incidental advantage is that non-response on a particular item can simply be treated as a distinct variable of a set. Thus we have five instead of four "dummy" variables[1] in the set for father's level of schooling: elementary; secondary (or

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adjusted sample in this analysis; automatically this forces the mean values of the dependent variables for each course type to equal the proportion of all Japanese upper-secondary-school students enroled in that type. An exception is the split between academic-general and non-academic general courses, which is taken directly from our sample.

[1] A "dummy" or categorical, variable is given a value of 1 where the particular categorization applies, zero where it does not. Thus the mean value of a dummy variable is the proportion of the sample population in that category. But dummy independent variables differ from categorical dependent variables in the regression analysis in that they are <u>not</u> probabilities and cannot be conceived as continuous in their values.

"middle"); higher (or junior college); university; and, a variable in itself, "no response." To avoid over-determination of the value of the dependent variable, one variable in each set among the independent variables is an "omitted dummy," which is in fact picked up in the intercept. The regression coefficients on all other dummy variables of a set are comparisons with those values of the dependent variable that are associated with the omitted dummy. We have chosen which variables to treat as omitted dummies accordingly, to facilitate the interpretation of results. Thus in all equations the omitted education dummy was elementary schooling (the most frequent among fathers), to which all other schooling categories are compared. In equations in which we used father's occupational status, we selected level 5 as the dummy to be omitted. This status level is seasonably well represented in both rural and urban populations; it picks up a majority (but by no means all) of the farmers along with highly skilled manual workers and low-level clerical and sales personnel. The age range 40-54 was the omitted dummy in the set for father's age; this covers the modal age range for fathers of students in the last year of upper-secondary school and includes the normal age of highest earnings. (Retirement age for most "permanent employees" in Japan is 55, though there are signs currently that this situation is changing.) The omitted dummy variable on number of children in the family (the student and his siblings) was the modal category, families with two or three children.

Both for its inherent interest and to serve as an introductory example that should elucidate the use of dummy variables and of a set of dependent variables whose sum must equal 1.00, we present in Table 3-10 the findings of a very simple regression in which we used only one set of independent variables, those for father's schooling (FLEVS) with each of the five dependent variables. Since we used no independent variables other than father's schooling, the beta coefficients of this table merely provide the same information concerning percentage distributions among types of schools already shown in Table 3-9, but they present it in a different form. The intercepts in this case are simply the values for sons of men with elementary schooling only; these values must add to 1.00 across the five types of schools. The other beta coefficients state by how much the proportions attending a given type of course exceed or fall short of the proportions among sons of elementary-school fathers who are enrolled in that course. Thus, looking down the equation for General B, the academic-general course, it is immediately evident that the more education a youth's father had, the greater is the likelihood that, if he goes to upper-secondary school, he will enrol in an academic-general curriculum; contrasts with sons of elementary-school fathers are in each case (secondary through university) highly significant. So also, although the table does not show this, is the contrast between sons of secondary-school fathers and those who went further. For sons of university graduates, the equation tells

TABLE 3-10

MULTIPLE REGRESSION ANALYSIS OF EFFECTS OF FATHER'S LEVEL OF SCHOOLING ON TYPE OF COURSE TAKEN; EQUATION (1)

Equation (1)	General B	General A	Agri-culture	Com-mercial	Technical
R^2	.079	.010	.009	.017	.008
F	95.065	11.288	10.078	19.324	9.040
Degree of Freedom:					
From Regression	4447	4447	4447	4447	4447
Total	4451	4451	4451	4451	4451
	Beta Coefficients (metric)				
Intercept	.305***	.146***	.096***	.198***	.255***
Fathers Level of Education (FLEVS)					
1. Elementary[a]	--	--	--	--	--
2. Secondary	.195***	-.043***	-.026*	-.070***	-.056***
3. Higher Schools	.347***	-.075***	-.063***	-.114***	-.096***
4. University	.467***	-.114***	-.092***	-.147***	-.113***
5. Non-response (and Misc. Unclassified)	.075	.002	.011	-.081	.003

[a]Omitted dummy; value is in the intercept.

*T value significant at P = .05.

**T value significant at P = .01.

***T value significant at P = .001.

us that chances are .772 (.305 + .467) of attendance in an academic-general course, but only .051 (.198 - .147) of attendance in a commercial course. The big contrast is clearly between the academic-general and all other courses; the commercial course has the most negative selectivity by father's education, but contrasts between the commercial and other courses in this respect are negligible relative to the contrasts of all others with the academic-general curriculum. But these data do not depict a highly selective system of "educational inheritance." Even for the academic-general curriculum versus all others, father's schooling explains only eight per cent of the variance (R^2 = .079), with a third of the sons of elementary-school fathers attending, and a majority of all academic-general students coming (as previous analysis showed) from such homes. (In all cases the coefficients of determination are statistically significant, but the academic-general curriculum aside this is as much a reflection of the large numbers in our sample as of the importance of the associations.)

Commonalities and the Coefficients of Determination

A summary view of just how much or how little of the variance in enrolment in one or another type of course may be explained by a fuller range of background specifications is presented in Table 3-11. The sets of independent variables (which we will specify more fully later) include in addition to father's schooling

TABLE 3-11

SUMMARY OF EQUATIONS USED IN MULTIPLE REGRESSION ANALYSIS OF EFFECTS OF FAMILY BACKGROUND AND TYPE OF COURSE TAKEN

Equation Number	Description of Equation: Sets of Independent Dummy Variables (omitted dummy in parentheses)	Statistic	Type of Course (Dependent Variable): General B	General A	Agriculture	Commercial	Technical
(1)	FLEVS, Father's Level of Schooling (1. Elem. Educ.)	R	.281	.100	.095	.131	.090
		R^2	.079	.010	.009	.017	.008
		F	95.065	11.288	10.077	19.324	9.004
		Intercept	.305	.146	.096	.198	.255
(2)	FO-III-Father's Occupation, Classification III (4. Proprietor or manager in trade)	R	.280	.196	.395	.172	.235
		R^2	.078	.038	.156	.030	.055
		F	41.992	19.673	91.228	15.103	28.875
		Intercept	.413	.103	.014	.255	.215
(3)	FLEVS (1.) FO-III (4.)	R	.340	.206	.397	.211	.244
		R^2	.115	.042	.157	.045	.060
		F	44.468	15.134	63.816	15.910	21.611
		Intercept	.353	.114	.013	.290	.230
(4)	OSTAS, Father's Occupational Status (5. Level 5) B-FSE, Birth Order & Father's Employment Type (5. Employees) SIB, Number of Siblings (2. Family of 2-3 children)	R	.330	.205	.472	.197	.238
		R^2	.109	.042	.223	.039	.056
		F	33.800	12.206	79.562	11.224	16.596
		Intercept	.366	.053	.050	.201	.331
(5)	FLEVS (1.) OSTAS (5.) B-FSE (5.)	R	.355	.205	.473	.217	.240
		R^2	.126	.042	.224	.047	.057
		F	37.687	11.489	75.300	12.917	15.887
		Intercept	.313	.062	.054	.230	.341
(6)	FLEVS (1.) FO-III (4.) FAGE-Father's Age and Father Deceased (2. Age 40-49) SIB (2.)	R	.351	.215	.406	.219	.261
		R^2	.123	.046	.165	.048	.068
		F	31.079	10.705	43.794	11.193	16.243
		Intercept	.384	.107	.031	.276	.202
(7)	FLEVS (1.) OSTAS (5.) B-FSE (5.) FAGE (2.) SIB (2.)	R	.367	.213	.476	.223	.265
		R^2	.135	.045	.227	.050	.065
		F	28.693	8.749	54.037	9.658	12.906
		Intercept	.340	.061	.059	.219	.320

the following: father's type of occupation (FO-III) used previously in Table 3-7, the occupational status variable (OSTAS), father's age (F-AGE), and family size or siblings (SIB). Finally there is a combined variable (B-FSE), relating to birth order and whether the youth's father was engaged in farming, was otherwise self-employed, or was a wage or salaried worker. It is evident immediately that none of the sets of background variables would do very much to improve our ability to predict the chances that a young man would enrol in the non-academic general or the commercial course. Although there are a few particular relationships that are indeed meaningful (to which we will return) no regression turned up an R^2 exceeding even 5 per cent for either the non-academic general or the commercial curriculum. We did slightly better on technical schools when we included among our independent variables the set FO-III (a nine-category classification by father's occupational type); indeed, the FO-III set alone gave us an R^2 of .055, and the highest we could push it, by combining other sets of variables with the set FO-III, was to an R^2 of .068.

We have already noted repeatedly the distinctiveness of the academic-general course in tracing the effects of father's education on likelihoods of son's enrolment. Taken by itself, the occupational-type set FO-III just about matches the education set in amount of variance explained (though less efficiently, since there are more variables in the FO-III than in the education, or FLEVS set). There is of course some multicollinearity between father's schooling and his

type of job, but combining schooling and occupational type nevertheless improves substantially the predictive power of the equations for the academic-general courses. Other combinations, even with more variables, raise the R^2 very little.

Finally, we come to the agricultural courses. Occupation alone tells more here than does any full equation for any other curriculum, for the simple reason that sons of farmers are by far the most likely to take agricultural courses. Indeed, education alone explained very little with respect to enrolment in agricultural schools and it adds nothing once we know that a youth is the son of a farmer. (On equation (2) the value of R^2 is .156 and on equation (3), which adds FLEVS, it rises only to .157.) For the agricultural curricula, equations (4) and (5) are distinctly superior to equation (3); those equations have both a higher coefficient of determination and a higher F value than was obtained with equation (3). But to see what lies back of this, we must look into the regression coefficients.

The Regression Coefficients and Patterns of Likelihoods

A preliminary analysis of associations between father's occupational status and son's selection of course type (along with career expectations) revealed that the supposed rank-ordering by occupational status level was being confounded by the fact that farmers were concentrated in levels 5 and 6, and especially in level 5. No matter where in an occupational status or prestige scale farmers are

located they are out of place; we are dealing here with another dimension in attitudes, opportunities, and behavior. This problem is resolved quite neatly, however, by including a farm, non-farm distinction in the regressions--not only for analysis of choice of type of course but in other analyses as well. We therefore included a set of independent variables that distinguished among fathers who were farmers, self-employed in other spheres, and wage or salaried workers in all regressions in which we were using the status set, OSTAS. Hypothesizing further that pressures on young men to maintain the family farm would concentrate especially on first and/or only sons, and taking into account the likely interaction effects between birth order and parental employment status (i.e. as farmer, self-employed, or wage-worker) in their effects on choice of course, we then went on to construct the independent-variable set B-SFE, as follows: (1) first son of a farmer; (2) other son of a farmer; (3) first son of a self-employed man; (4) other son of a self-employed man; (5) son (order not specified) of a wage or salaried worker; and (6) others (including non-response). Combining these two sorts of classifications in a single set of independent variables instead of merely introducing birth order specifies variables much more adequately; birth order does not have the same implication in a non-farm as in a farm home. Equation (5), set out for each type of course in Table 3-12, displays the results obtained using the variable set B-FSE along with FLEVS and OSTAS.

TABLE 3-12

MULTIPLE REGRESSION ANALYSIS OF EFFECTS OF FATHER'S SCHOOLING AND OCCUPATIONAL STATUS AND OF BIRTH ORDER WITHIN FATHER'S EMPLOYMENT STATUS ON TYPE OF COURSE TAKEN; EQUATION (5)

Equation 5	General B	General A	Agriculture	Commercial	Technical
R^2	.126	.042	.224	.047	.057
F	37.687	11.489	75.300	12.917	15.887
Degrees of Freedom:					
Form Regression	4434	4434	4434	4434	4434
Total	4451	4451	4451	4451	4451
	Beta Coefficients (Metric)				
Intercept	.313***	.062***	.054***	.230***	.341***
Father's Educational Level (FLEVS)					
1. Elementary[a]	--	--	--	--	--
2. Secondary	.120***	-.025	-.008	-.058***	.030
3. Higher	.220***	-.045*	-.024	-.093***	-.058*
4. University	.265***	-.069**	-.035	-.116***	-.045
5. Non-response	.051*	.003	.010	-.071***	.007
Father's Occupational Status (OSTAS)					
1. Highest	.373***	.003	-.028	-.127*	-.221***
2.	.274***	-.011	-.011	-.091**	-.161***
3.	.229***	.027	-.026	-.082***	-.149***
4.	.078**	.041*	-.009	-.015	-.095***
5. a	--	--	--	--	--
6.	-.072***	.058***	-.059***	.002	.071***
7.	-.059*	.087**	-.022	.013	-.028
8. Lowest	-.159**	.087*	-.010	.109	-.028
9. Non-response or unclassified	.016	.060**	.001	-.069**	-.009
Birth Order and Father's Employment Status (B-SFE)					
1. First and/or only sons of self-employed	.077***	.021	-.017	.011	-.091***
2. Other sons of self-employed	.045	.027	-.013	.034	-.091***
3. First and/or only sons of farmers	-.087***	.126***	.395***	-.152***	-.281***
4. Other sons of farmers	-.018	.192***	.119***	-.109***	-.183***
5. All sons of employees[a]	--	--	--	--	--
6. All others (inc. non-response)	-.003	.045*	.000	.018	-.060**

[a]Omitted dummy.

*T value significant at P = .05.

**T value significant at P = .01.

***T value significant at P = .001.

Picking up first with the equation for the agricultural course, it is immediately evident that most of the work is being done by the set B-FSE. That is, once we know whether a young man is the son of a farmer and if so whether he is a first (or only) son, we have learned about all that will be of any use to us in predicting the likelihood that he will attend an agricultural school. Whereas just over five per cent of the sons of fathers who were employees in status 5 and completed only elementary school went into the agricultural course, 45 per cent of the first sons of farmers did so (.054 + .395). Other sons of farmers were more likely than sons of men in other occupations to attend an agricultural school, to be sure, but in nothing like the striking proportions that characterize first sons. Furthermore, the beta coefficients on the OSTAS and the B-SFE sets for agricultural schools are highly stable, no matter what other variables or sets of variables are added; neither father's schooling nor family size make any difference.

The other type of course that draws disproportionately from the rural population and from sons of farmers in particular is the non-academic general. But on General A courses, the coefficients on first and on other sons of farmers are reversed; it is the "other" sons of farmers rather than first sons who are most likely to enrol in non-academic general courses.

Even taking into account the relative inaccessibility of technical secondary schools to farm youth living at home, we may ask

whether or not that is sufficient to account for the strong negative beta coefficients on farmers' sons in the equation for enrolment in technical schools. The complexity of this question with reference to General-A students will become increasingly evident later, but given the propensity of first sons of farmers to attend agricultural schools it should hardly surprise us that the negative coefficient on technical courses is especially high for such youth. First sons of farmers fall short of youth with the characteristics included in the intercept (elementary-school fathers who are of occupational status 5 and are employees) by .281--leaving only six per cent (as against a third for the intercept) who enter the technical courses. (This exceeds the negative coefficient even for sons of men in the highest occupational status.) Relevant also is the considerably higher proportion of sons of farmers who find their way into the academic, General B, courses: over a fifth among first sons (.313-.087) and 30 per cent (.313-.018) among other sons of farmers. However, whereas we could virtually ignore all of the sets of variables other than B-FSE in discussing the agricultural, or even the non-academic general course, the picture is very different for the academic, commercial and technical courses, in all of which father's education and occupational status has at least some degree of influence.

At this point it will aid in interpretation if we compare the coefficients on education in equation (5) with those in euqation (1). Virtually all of the education coefficients in equation (5) are lower than their corresponding values in equation (1) because of the association

between a father's schooling and his occupational status. In part that association is built into the codes for occupational status, especially at the top, since we used an adaptation of Duncan's scale with its derivation from education and earnings characteristics of the various occupations. Education loses virtually all of its significance with respect to choice of agricultural, non-academic general, or technical schools, once OSTAS and/or the combined sets of variables B-FSE are included. It loses some, but by no means all of its significance in predicting choice of the commercial course. The coefficients on education are cut back sharply for the academic-general course, but this time primarily because of the strength of the higher occupational statuses as predictors that a son will select an academic-general curriculum.

Turning this around, we may ask how far the beta coefficients for occupational status are in turn reduced by the association between occupational status and schooling of fathers. A comparison of results on OSTAS in equations with and without father's schooling can be adequately summed up without another full table. First, at occupational status levels below 5 the inclusion or exclusion of father's schooling made no difference, regardless of course type. (The only instance in which the coefficient changed by as much as .02 was for status group 8 in the equations for academic general courses, where the coefficient falls (with introduction of FLEVS) from .18 to .16.) Shifts are somewhat more important in the upper status levels on the

equations for commercial and for technical schools, although the pattern for these courses on equation (5) is not changed sufficiently to alter the starring of items in an equation that substitutes SIB (number of children) for father's education. The greatest differences are for the sons of upper-status men in the equation for academic-general courses. Rounding to two digits, instead of the equation (5) coefficients of .37, .27, .23 and .08 for status categories 1 through 4, respectively (shown in Table 3-12), equation (4), which substitutes SIB for FLEVS, gave values of .54, .42, .31 and .12, respectively. Fortunately, however, these coefficients behave in a systematic fashion that introduces no substantive problem of interpretation; even after being cut back by inclusion in the same equation, the beta coefficients come through strongly on the academic-general course for both father's schooling and his occupational status.[1]

Turning to occupation type, the variable set FO-III, which is specified in the row headings of Table 3-13 (and was used in Table 3-7 also) was derived by computerizing a new combination of the original three-digit occupation codes. Although it has some "vertical" distinctions, as in the split between higher-technical (code 2) and

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[1]When occupational type instead of occupational status is used, the problem of multicollinarity with father's schooling is greatly reduced. The interested reader can readily satisfy himself on this point so far as the education coefficients are concerned by comparing those for equation (3), shown in Table 3-13, with the coefficients on education in equations (1) on the one hand and (5) on the other (Tables 3-10 and 3-12).

TABLE 3-13

MULTIPLE REGRESSION ANALYSIS OF EFFECTS OF FATHER'S OCCUPATION TYPE AND SCHOOLING ON TYPE OF COURSE TAKEN; EQUATIONS (2) and (3)

Equation Number	General B (2) FO-III	General B (3) FO-III FLEVS	General A (2) FO-III	General A (3) FO-III FLEVS	Agriculture (2) FO-III	Agriculture (3) FO-III FLEVS	Commercial (2) FO-III	Commercial (3) FO-III	Technical (2) FO-III	Technical (3) FO-III FLEVS
R^2	.078	.115	.038	.042	.156	.157	.030	.044	.055	.060
F	41.992	44.468	19.673	15.134	91.228	63.816	15.103	15.910	28.875	21.611
Degrees of Freedom:										
From Regression	4442	4438	4442	4438	4442	4438	4442	4438	4442	4438
Total	4451	4451	4451	4451	4451	4451	4451	4451	4451	4451
				Beta Coefficients (metric)						
Intercept	.413***	.353***	.103***	.114***	.014	.013	.255***	.290***	.215***	.230***
Father's Education (FLEVS)		--		--		--		--		--
1. Elementary		.133***		-.028*		.003		-.070***		-.038*
2. Secondary		.263***		-.048*		-.018		-.115***		-.082**
3. Higher		.348***		-.080***		-.032		-.149***		-.087**
4. University		.050*		.005		.017		-.076***		.004
5. Unclassified, N.R.										
Father's Occupational Type; Classification III (FO-III)										
1. White Collar	.188***	.118***	-.010	.055	.018	.022	-.128***	-.097***	-.068**	-.048*
2. Higher Technical (Engineers and Technicians	.085**	.044	-.046*	-.036	.004	.007	-.128***	-.111***	.084**	.096***
3. Managerial in Manufacturing or Construction	.203***	.126***	-.045*	-.028	-.005	.001	-.121***	-.089***	-.032	-.010
4. Proprietors and Managers in Trade[a]	--	--	--	--	--	--	--	--	--	--
5. Artisans in Traditional Trades	-.046	.033	-.042	-.044	.000	.001	.024	.014	.064	.061
6. Skilled Workers in Heavy Industry Construction	-.169***	-.148***	-.011	-.016	.021	.022	-.056*	-.067**	.214***	.209***
7. Other Manual	-.137***	-.109***	.010	.004	.012	.012	-.033	-.047	.148***	.141***
8. Farmers; others in Agriculture, Forestry and Fishing	-.151***	-.131***	.141***	.137***	.276***	.276***	-.174***	-.183***	-.093***	-.098***
9. Miscellaneous	.087	.016	-.103	-.086	-.014	-.005	-.068	-.043	.097	.119
10. Non-response	-.005	-.020	.023	.024	.033*	.031*	-.125***	-.110***	.074**	.075**

[a]Omitted dummy.

*T value significant at P = .05. **T value significant at P = .01. ***T value significant at P = .001.

"skilled workers in heavy industry and construction" (code 6), it is intended still to be as far aspossible a "kind of activity" classification with minimal overtones of status. "Higher technical" occupations (engineers and technicians) are grouped together and again excluded from "white collar" on the hypothesis that this kind of work calls distinctively for a sense of concrete objects, even when that awareness finds its expression on paper. The third category, managerial in manufacturing or construction, was separated from white-collar because of uncertainty as to how far we would be picking up production managers with, again, an eye and a hand to the processing side of things. The white-collar group is of course large even after such deletions; it ranges from the lowliest clerical worker to the (rare) top-level bureaucrat or financier. The omitted dummy variable in this case is proprietors and managers in trade, a category that appears in substantial numbers in all sizes of places, rural and urban.

As we should expect, the category farmers (and others in agriculture, forestry and fishing) carries generally high beta coefficients, positive or negative, across all course types, though sons of farmers differ less from the traders in their low propensities to attend technical school than in the likelihoods that they will go to commercial schools or enter an academic-general course. In the equations for General B courses the positive effects of high-level white-collar status are what comes through most strongly so long as education is not included. However, when parental education is added

it takes the dominant position, and the only variable in the FO-III set that retains a coefficient significant at the .01 level is the negative beta on skilled workers in heavy industry. Equations (2) and (3) (Table 3-13) tell us nothing about the choice of non-academic general or of agricultural curricula that we could not pick up from information about farming fathers; indeed, we were much better off on equations (4), (5), and (7) with respect to choice of the agricultural curriculum.

The most interesting findings for equations (2) and (3) relate to the commercial and technical courses. In view of the fact that the omitted dummy was for managers and proprietors in trade, it should come as no surprise that all the occupation-type coefficients except those on "artisans in traditional trades" carry negative signs on the equations for enrolment in commercial courses; this is no more than a mirroring of the distinctiveness in rates at which traders' sons go to commercial schools. The fact that coefficients for artisans in traditional trades are so close to zero (not only for commercial schools but for most other curricula as well), confirms the validity of the zero-order relationships displayed in the simple cross tabulations of Table 3-7. No sharp line distinguishes the small artisan from the trader, there is a much clearer distinction between the traditional small-scale artisan and the skilled worker in modern sectors of the economy. The other feature of Table 3-13 that may be worthy of remark with respect to the equations for commercial courses is the systematically negative weights on parental schooling. The beta

coefficients are sizable relative to the intercept (elementary education); in other words, there is a decided selection against entry into commercial schools among youth from better-educated homes relative to youth whose fathers had compulsory schooling only.

The last two equations presented in Table 3-13, those for technical curricula, are notable for the very high coefficients among sons of skilled workers (rounding to .21 whether or not parental education is included in the regression), along with the decidedly significant coefficients, at .14 to .15, for sons of other manual workers (excluding traditional artisans). Also interesting is the appearance of a positive, though weak, coefficient for the higher technical workers, a coefficient that is raised slightly when father's education is in the equation. The negative values of the regression coefficients for higher and university education tend to purify the "higher technical" category of its status elements. Indeed, this is generally the effect of introducing father's education along with occupational type on the classification used here, which makes equation (3) a particularly satisfactory one for all but the rural populations.

Equation (6) of Table 3-14 is very like equation (3) except for the addition of the set of dummy variables on father's age and that on family size. The added variables have virtually no effect on the coefficients for education or for occupational type. Neither, for that matter, are the coefficients for father's age and for family size (SIB) sensitive to the sets of other variables in an equation with them. As

TABLE 3-14

MULTIPLE REGRESSION ANALYSIS OF EFFECTS OF FATHER'S OCCUPATION TYPE, SCHOOLING AND AGE, AND OF FAMILY SIZE ON TYPE OF COURSE TAKEN; EQUATION (6)

Equation (6)	General B	General A	Agriculture	Commercial	Technical
R^2	.123	.046	.165	.048	.068
F	31.079	10.705	43.794	11.193	16.242
Degree of Freedom from Regression	4431	4431	4431	4431	4431
Total	4451	4451	4451	4451	4451
			Beta Coefficients		
Intercept	.348	.107	.031	.276	.202
Father's Education Level (FLEVS)					
1. Elementary	--	--	--	--	--
2. Secondary	.129	-.025	-.001	-.069	-.036
3. Higher Schools	.257	-.045	-.022	-.111	-.078
4. University	.347	-.076	-.034	-.150	-.088
5. Non-response	.052	.012	.021	-.078	-.007
Father's Occupational Type; Classification III (FO-III)					
1. White Collar	.108	.006	.020	-.094	-.040
2. Higher Technical (Engineer & Technicians)	.035	-.035	.003	-.107	.104
3. Managerial in Manufacturing, Transport and Construction	.120	-.028	-.002	-.087	-.004
4. Proprietors and Managers in Trade	--	--	--	--	--
5. Artisans in Traditional Trades	-.036	-.043	.000	.015	.064
6. Skilled Workers in Heavy Industry and Construction	-.151	-.015	.021	-.066	.211
7. Other Manual	-.115	.005	.007	-.044	.148
8. Farmers and Others in Primary Industry	-.134	.134	.274	-.182	-.092
9. Miscellaneous	.016	-.085	.001	-.046	.114
10. Non-response	-.025	.029	.032	-.107	.072
Father's Age (F-AGE)					
1. Under 40	-.142	.037	.053	-.039	.091
2. 40-54	--	--	--	--	--
3. 55 and over	-.039	.005	-.040	.019	.055
4. Not living	-.172	-.001	-.056	.058	.125
5. Non-response	.049	-.037	-.033	-.051	.072
Number of Siblings (SIB)					
1. Only child	.027	-.033	.012	.019	-.024
2. One of two or three children	--	--	--	--	--
3. One of four children	-.028	-.034	-.013	.018	.027
4. One of five or more children	-.040	.060	-.010	.021	-.031

we might expect, sons of very young or very old men (and those whose fathers are deceased) are less likely to be enroled in an academic-general course, with a view to going on to college or university, than are the sons of men in their peak years. The special tendency of youth whose fathers are not living to enter technical secondary schools, noted previously in a zero-order comparison, is repeated clearly here, with father's schooling and occupation controlled. So far as family size is concerned, on the other hand, we found virtually no relationships. The only exception is for youth from large families to enrol slightly more often in the non-academic general curricula; but this is largely if not wholly a reflection of the facts that rural families tend to be bigger, that youth from big families are somewhat less likely to be first sons (or, of course, only sons), and that "other" sons of farmers and sons of rural men in occupations other than farming are the most likely to take the non-academic general courses. No economic interpretation of these findings with respect to family size and course type could be justified.

In sum, youth from all sorts of backgrounds enter all sorts of upper-secondary schools and courses in Japan. This is an extremely important characteristic of Japanese society and education today. Nevertheless, as study of both simple cross-tabulations and of the regression coefficients has shown, there are also distinct patterns in choice of one sort of school and curriculum or another, patterns that reflect family backgrounds. Although many youth of humble background

enter academic courses in the upper secondary schools, the likelihood that the son of a well educated man or one in a high-status occupation will do so is substantially the greater. Youth whose fathers have manual or technical skills are more aware of and oriented toward training in technical schools, whatever their fathers' schooling. Indeed, selection is somewhat less against the youth with well-educated parents in the technical than in the commercial curricula. The latter draw heavily from the trading population, as we should expect, but also from the lowest ranks of educational and occupational status.

Despite the density of farm settlement in Japan and the common stereotype of the Japanese farmer as a man geographically and culturally very close to the city, the profiles with respect to attendance at agricultural schools (and to a lesser extent non-academic general schools) are distinctive. Being the first (or only) son of a self-employed man had little effect on propensities to attend commercial schools, but being the first (or only) son of a farmer increased very substantially the likelihood that a youth would go to an agricultural secondary school. We do not suggest that farms in Japan are never passed on to a second or a third son, or that the first son is never selected to go on to university while his younger brother is groomed to take over the farm. However, the strength of the first-son position in directing a farm youth into agricultural school and

thence, presumably, into agriculture is one of the really striking and unambiguous findings of this regression analysis.

V. The Incidence of Enrolment in Preferred and Non-Preferred Type of Course

A priori we should expect that the courses in which students are actually enrolled would reflect a number of influences that affect both their preferences and the extent to which they are in a position to realize those preferences. In fact we have already introduced both of these aspects of allocation among course types when we considered occupational inheritance as a continuity in broad types of interests and career orientations on the one hand, accessibility or inaccessibility of certain types of curricula on the other. In an attempt to break into the complex of influences involved, we asked students questions such as the following: (a) whether they were enroled in the type of course and (separately) in the particular school that was their first preference at the time at which they entered upper-secondary school; (b) whether they had taken examinations for entry to any other type of course; (c) whether, looking back, they now wish they had taken some other type of curriculum, and if so which; and (d) for those who expressed other preferences, the reasons why they were enroled in the course they actually had taken.

Preference Patterns by Course in Which Enroled

Table 3-15 summarizes the evidence on preference patterns

TABLE 3-15

COURSE PREFERENCE SUMMARY BY TYPE OF COURSE IN WHICH ENROLLED

	General B	General A	Agriculture	Commercial	Technical
1. Percentages Reporting they are not in the Course Initially Preferred	19	46	43	51	41
2. Percentages of those in Intially Preferred Course but not in Intially Preferred School	36	17	10	6	11
3. Total initially in other than Preferred Situation (1 plus 2)	55	63	53	57	52
Percentages Taking Examinations for Other Course Types:[a]					
4. Total	10	9	19	27	33
5. For General B	*	1	6	19	16
6. General A	-	*	-	-	-
7. Agriculture	-	-	*	-	-
8. Commerce	-	1	3	*	2
9. Technical Sec.	3	3	9	5	*
10. Tech. Junior College	7	4	1	3	15
Percentages who Initially Preferred Another Course, but Took no Other Exam.	15	40	34	33	26
Percentages Who Now Wish They Had Taken Another Course					
12. Total	24	62	54	54	56
Preferred Course:					
13. General (A or B)	1[b]	*[c]	14	27	32
14. Agriculture	1	3	*	1	2
15. Commerce	3	14	7	*	5
16. Technical Sec.	8	26	19	11	*
17. Technical Jr. College	7	15	10	9	14
18. Other	4	4	4	6	3

*Inapplicable. (This count does not include an examination for entry to another school, but the same type of course.)

[a]Only 1 per cent took examination for more than one other course. Such cases are counted under both courses, which slightly exaggerates the totals.

[b]Reference is almost certainly to another school, still in a General B stream.

[c]Under 0.5 per cent (preferring General B).

by type of course the student actually pursued. First of all, it is clear that the students in the General B curriculum typically had wanted to be in that course (as they remember) in the first place; only a fifth of the General B as against two fifths to half of students in other curricula indicated that they had entered a type of course that was not initially their personal first choice. The same contrast between General B and all other students prevails in the perspective of senior year, though the proportions who express preference for an alternative rose for all curricula. The amount of increase in dissatisfaction is minimal for the commercial stream (which had had the highest percentage of initially dissatisfied); students in the General A curriculum both expressed the greatest final rate of dissatisfaction and the biggest increase in that rate as between their (remembered) initial preferences at entry and their reassessments with approaching completion of upper-secondary school. When preferences with respect to specific school are taken into account, the General B students appear in a very different light, however; more than a third (36 per cent) of those who had initially wanted to be in that kind of course had not gained access to the school they preferred; the parallel figures for other course types ranged from 6 to 17 per cent. Adding the first two rows of Table 3-15, the percentages in other than preferred course and school are about the same for General B as for other curricula; in all cases proportions run somewhat over half. Selection into the favored and academically elite schools, with its implications for

subsequent allocations into and among universities, can be quite as important as the processes whereby young people gain entry to one versus another type of curriculum.

A comparison of proportions stating they initially preferred a course other than that in which they were enrolled with the proportions who took examinations for another course reveals that the most active in their efforts to gain entry to preferred alternatives were the disappointed students in the technical secondary streams, three fourths of whom had in fact tried for something else; but this does not mean that they were typically disinterested in technical schooling. The disappointed technical-school students who had taken examinations for other courses were divided about equally between those who had sought entry to academic general courses and to technical junior colleges. At the other extreme, only one in five of the General A students expressing dissatisfaction from the start had taken examinations for entry to any other type of course. This does not imply that their expressed preferences were distorted, but rather, we suspect, that attendance in the preferred curriculum was precluded for one reason or another anyway, and hence there was no use in taking examinations. Also, among General A students dissatisfactions were more often vague initially: they had less focused perceptions of preferred alternatives at the time when they entered upper-secondary school.

Whether we look at the data on examinations taken or the

preferred courses among those who "now" (in their senior year) wish they had taken another course, the unrealized preferences are most frequently for either technical (including technical junior college) or academic-general curricula. This is strikingly the case with respect to examinations. Virtually all of the general-course students who preferred something else and had taken examinations (including the General A students) had sought entry into a technical secondary school or a technical junior college. We have already commented on the even division of technical-secondary students between examinations for academic-general courses and for technical junior colleges. Students who had taken other examinations but were enroled in agricultural courses had tried for technical-secondary school more often than for any other type; fewer had attempted technical junior college. Only the commerce students leaned more heavily, in their other examinations, toward the general than the technical curricula.

The proportion in each curriculum who, now that they had had almost three years of upper secondary school, expressed a wish that they had taken some other course is considerably greater than the proportion who in fact took examinations for other courses to start with. This in itself should result in a greater spread in types of courses for which at least a few respondents expressed a preference than in types for which they had taken examinations, but there are also some shifts in the patterns. Most of these shifts may be

attributed to (a) the preference characteristics of those who saw no use in taking examinations for their preferred courses, and (b) changing perceptions of alternatives with widening experience and knowledge acquired during the years in upper-secondary school. Two modifications are of particular interest. First, among students in the technical upper-secondary schools, the increase in numbers preferring some other course is concentrated especially on preferences for the general (and in fact the academic-general) curriculum; the percentages wishing they might have secured entry to technical junior college is very nearly the same as proportions who initially took examinations for entry into such courses. There is unquestionably a progressive raising of perceived possibilities and ambitions among the students going through the upper-secondary technical streams. Second, students in the General A stream expressed especially an increased interest in technical upper-secondary curricula, and there was a marked increase for this group in proportions preferring commerce streams also. The data support the hypothesis posed earlier, that rural General A students (both from the start and as they approached completion of their upper secondary schooling) commonly experience some frustration associated with lack of accessibility to other than general and agricultural curricula, along with belated awareness of the possible implications of curriculum choice.

Associations between Family Background and Realization of Course Preferences

A priori it might be expected that youth from higher status families would be more often enroled in the type of course they preferred. However, the relationships among family background, type of course attended, and course preference are complex, and family backgrounds seem to have only moderate effects on the extent to which youth realize their course preferences or experience frustration in this respect. Table 3-16 provides a summary of these relationships for the initial preferences.

An examination of this table shows immediately that over-all the sons of higher status and better educated parents were the least often dissatisfied at entry to upper-secondary school; and they were the best satisfied of the students in General B curricula. However, they are the most dissatisfied of those enrolled in agricultural or commercial curricula. So far as failure to enter initially preferred type of course is concerned, status made very little difference among the General A students. As we might expect, sons from status level 5 who were enrolled in an agricultural course (usually sons of farmers) were much less likely than other students in that course initially to have preferred something else. Sons of small traders and artisans in status level 6 (as compared with higher level traders, white collar workers or technicians, or low-level manual workers)

TABLE 3-16

PERCENTAGE OF THE STUDENTS WITHIN EACH COURSE-TYPE AND FAMILY BACKGROUND CATEGORY WHO WERE ENROLLED IN OTHER THAN THEIR INITIALLY PREFERRED COURSE

Background Characteristics	Type of Course in Which Enrolled					
	General B	General A	Agri-culture	Com-mercial	Tech-nical	Total (All Courses)
Father's Occupational Status						
1, 2, 3	14	45	58	58	48	24
4	19	49	48	48	46	33
5	22	40	38	53	41	35
6	22	47	44	24	56	36
7, 8	21	50	51	47	38	36
Father's Occupational Type						
White Collar and Trade	18	43	58	50	45	31
Technical-Manual (FAB)	21	48	54	49	39	36
Agriculture Etc.	21	47	39	59	37	37
Father's Level of Education						
University	12	41	50	62[a]	55	20
Higher Schools	17			73	52	29
Secondary	17	46	42	50	43	31
Elementary	22	47	44	49	39	37
Mother's Level of Education						
Higher and University	19	b	b	57[a]	48	26
Secondary	15	47	39	53	46	29
Elementary	24	48	46	50	39	39

[a] N = 10-24.

[b] Two out of 5 cases.

were the best satisfied of the students in the commercial curricula, the most dissatisfied of those in technical schools.

By the time these youth were nearing the end of their last upper-secondary year, larger proportions were inclined to express preferences for other courses, almost regardless of family background. There were some interesting contrasts, however, in the extent of shift in attitudes as reported by respondents. The differences between proportions expressing other preferences from their perspective as seniors and the proportions reporting that they had preferred another course from the start are shown by type of course and family background in Table 3-17. The General B students, most satisfied to start with, manifested very little shift of position, and the most thoroughly satisfied of all (General B students from status backgrounds 1, 2, and 3) changed scarcely at all from their initial position. Students taking agricultural courses were the most consistently inclined to view those courses more dimly from their perspective as seniors than at the entry stage. Though sons of farmers experienced less disenchantment with the agricultural curriculum than did sons of white-collar men, the surprising thing is probably the lack of substantial difference by family background rather than the existence of any such differences. The story with respect to attitude shifts among students in the General A curriculum is a very different one; here we observe a striking contrast between youth from farming homes and from status levels 5 and 6 generally as

TABLE 3-17

COMPARISONS OF PRESENT WITH INITIAL PERCENTAGES OF STUDENTS IN OTHER THAN PREFERRED COURSE BY FAMILY BACKGROUND AND COURSE IN WHICH ENROLLED

Background Characteristics	Present Minus Initial Percentages in other than Preferred Course Type of Course in Which Enrolled						Present Percentages All Courses
	General B	General A	Agriculture	Commercial	Technical	Total (All Courses)	
Father's Occupational Status							
1, 2, 3	2	12	17	6	12	5	29
4	6	-1	18	15	15	10	43
5	7	24	14	5	12	12	47
6	7	21	13	25	-1	13	49
7, 8	7	-7	17	1	16	7	43
Father's Occupational Type							
White Collar & Trade	3	10	18	5	15	6	37
Technical-Manual (FAB)	4	11	11	3	16	9	45
Agricultural etc.	10	21	13	2	12	13	50
Father's Level of Education							
University	2	5	9	3[a]	6	-8	12
Higher (Jr. Level)	10			-12	13	-13	16
Secondary	5	17	11	3	17	9	40
Elementary	7	17	14	5	15	11	48
Mother's Level of Education							
Higher and University	3	6[b]	6[b]	22[a]	21	7	33
Secondary	6	15	14	2	12	10	39
Elementary	4	18	13	3	17	9	48

[a] N = 10-24.

[b] N is 5 cases.

compared with all others. The most distinctly rural General A students from farm backgrounds seem to have experienced a major change in perceptions of educational and career alternatives. That only a tiny fraction of these youth were turning back toward agriculture is evident enough from the data concerning course preferences shown in previous tables; on the contrary, they appear to have become increasingly oriented toward urban life and jobs. Finally, the marked shift among the sons of status 6 fathers who were attending commercial schools may be significant, and for somewhat similar reasons; the data suggest, though they certainly cannot prove, an important change of perceptions and enlargement of horizons among the sons of the small artisans and traders during their years in commercial secondary schools.

One way of summing up relationships between parental status and degree of success in enroling in one's preferred course is to compare zero-order correlations between the dummy-variable preferred-course enrolment and the dummies for father's occupational status or education (available as an incidental by-product of other regressions). As Table 3-18 shows, the top three status levels display very modest positive correlations, while correlations for levels 5 to 8 were negative. (The fact that maximum negative values occur with status levels 5 and 6 is at least in part a reflection of the distortion that has been evident so many times before, because of the

importance of sons of farmers in these status levels.) Differences between the coefficients for categories 1 through 3 on the one hand and categories 7 and 8 on the other are statistically significant, but nevertheless unimpressive. Zero-order correlations were somewhat stronger between enrolment in preferred course and father's education, and the behavior of these coefficients is systematic in its consistent ordering from the highest positive value for sons of university men to the biggest negative value for youth whose fathers had elementary schooling only.

TABLE 3-18

COEFFICIENTS OF CORRELATION BETWEEN ENROLMENT IN PREFERRED COURSE AND DUMMY VARIABLES FOR FATHER'S OCCUPATIONAL STATUS AND EDUCATIONAL ATTAINMENT

Occupational Status		Educational Attainment	
Level	r	Level	r
1	+ .062	University	+ .081
2	+ .082	Junior College	+ .038
3	+ .070	Secondary	+ .027
4	+ .007	Elementary	- .097
5	- .041		
6	- .037		
7	- .022		
8	- .025		

Reasons for Enrolment in Other than Preferred Course

One of the questions included on the interview forms was intended to provide at least some clues concerning the reasons, as the students perceived them, why they had enrolled in a type of course other than the type that they now, in their senior year, wish they had been able or had chosen to take. The students were asked to circle the one most important reason from a list of six possibilities or, if none of these was most important, to use the last (seventh) place to write in the reason they regarded as first in importance. The responses are summarized by course type in Table 3-19.

TABLE 3-19

PERCENTAGE DISTRIBUTIONS OF CHIEF REASON FOR ENROLMENT IN A NON-PREFERRED COURSE TYPE BY COURSE IN WHICH ENROLLED

	Gen. B	Gen. A	Agri-culture	Com-mercial	Tech-nical
1. Nearer home	11	25	8	7	3
2. Parents wanted me to	22	14	34	20	17
3. Teacher wanted me to	15	22	28	23	20
4. Less expensive	4	5	5	5	5
5. Failed exam for other course	16	12	12	12	18
6. Lack of information about other courses	16	12	7	12	20
7. Other reasons	16	9	6	21	17
Totals: %	100	100	100	100	100
N	350	291	534	495	1160

Advice and various degrees of pressure from parents and teachers together account for over a third of the answers in all types of schools, but come through with special force, as we might expect, among those enrolled in the agricultural curricula and, to a lesser degree, in the commercial streams. Indeed, parents' advice alone accounted for a third of the answers among the agriculture students and parents and teachers together account for over three-fifths. Other reasons given by agriculture students are spread quite evenly over most of the specified categories, excepting for a slightly higher proportion stating they failed the examination for the preferred course.

Among the students in General A the predominant reasons are, first of all, nearness to home, followed closely by the response that the youth's teacher urged his attendance in this course; this is totally consistent with the objective facts concerning accessibility noted repeatedly in foregoing pages. The low proportion specifying that this school was less expensive than the preferred alternative might have been very substantially increased had the students counted in "expense" the true costs of attending a school away from home. The answer "lack of information about other courses" is also one that tended to be given only when no other specified answer seemed to be applicable as of the time at which the youth entered upper-secondary-school. (Some of the General B and the technical-school students went on to specify their lack of knowledge about technical junior colleges and some of the technical-course students remarked

on their prior limited awareness of the advantages of higher education and of the difficulties of getting into the universities from technical schools.) General A students, who had shifted their preferences most substantially, were nevertheless also the most likely simply to check the response that this school was "nearer home" (rather than initial "lack of information about other courses"). Examination failures were most likely to be for entry to technical junior colleges (among the technical and General B students) or for entry to academic general courses.

Labor Market Perceptions and Course Preferences

An important section of the interview questionnaire asked for opinions relating to Japanese labor markets. Although most of the analysis of these questions will be taken up later, two items on the list are of particular relevance here. One of these was the statement: "Among people who take a job directly after graduation from upper-secondary school, career prospects will be better for those who have finished a technical than for those who have finished a general course." The other, placed in another part of the list, was essentially the opposite: "Those who graduated from the general course of high school can be trained to the needs of a company. Therefore, the large corporation gives priority to those who graduated from a general course rather than from technical courses." Since

relationships between responses on the first and second of these items and course preferences were very nearly mirror images of each other, we present data using the first question only (Table 3-20). On the whole there is a remarkable consistency between perceptions of how employers view graduates of general and of technical streams and students' own preferences with respect to course of study. Thus among the general-course students the proportions who express satisfaction with the course they are in (the column "same") is distinctly lower among those who agree (and especially among those who agree strongly) that employers would prefer to hire graduates of the technical courses, as compared with the satisfied proportions among those who strongly disagree. For General A students, most of whom do not expect to continue to university, the satisfied proportion among those who strongly disagree was more than double that among those who strongly agree (50 as against 23 per cent whose course preference is where they are, in the general curriculum). The General B students, most of whom hope to attend a university, are less immediately involved, but the pattern on "same" is a consistent one. For General B and, especially, for General A students there is a clear and monotonic relationship between response to the attitude item and proportions who would prefer a technical course; among those who agree the proportions preferring technical schools are substantially higher than among those who disagree (or are undecided). Similarly, technical students are much more likely to express satisfaction with their

TABLE 3-20

PERCENTAGE DISTRIBUTION OF COURSE PREFERENCES BY TYPE OF COURSE IN WHICH ENROLLED AND PERCEPTIONS OF EMPLOYERS' ATTITUDES TOWARD GRADUATES OF TECHNICAL VERSUS GENERAL SECONDARY-SCHOOL COURSES

Course in Which Enrolled	Opinion Response[a]	Type of Course Preference					
		Same	Other Courses				Total
			Technical Secondary	Technical Junior College	General (A or B)	Other	
General B	Agree Strongly	69	12	11	*	8	100
	Agree Mildly	77	9	7	*	7	100
	Undecided	79	7	4	*	10	100
	Disagree Mildly	80	5	6	*	9	100
	Disagree Strongly	83	5	3	*	9	100
General A	Agree Strongly	23	30	22	*	25	100
	Agree Mildly	24	35	15	*	16	100
	Undecided	49	23	12	*	33	100
	Disagree Mildly	48	16	13	*	26	100
	Disagree Strongly	50	13	13	*	26	100
Agriculture	Agree Strongly	44	23	11	10	12	100
	Agree Mildly	39	19	12	15	15	100
	Undecided	49	18	7	17	9	100
	Disagree Mildly	51	13	9	17	10	100
	Disagree Strongly	39	20	7	28	6	100
Commercial	Agree Strongly	44	15	11	24	6	100
	Agree Mildly	50	12	10	22	6	100
	Undecided	52	8	9	23	8	100
	Disagree Mildly	41	9	10	31	9	100
	Disagree Strongly	46	9	4	33	8	100
Technical	Agree Strongly	47	*	15	27	1	100
	Agree Mildly	49	*	16	27	8	100
	Undecided	43	*	13	36	8	100
	Disagree Mildly	32	*	14	44	12	100
	Disagree Strongly	22	*	10	59	9	100

[a]The statement is: Among people who take a job directly after graduation from senior-secondary school, career prospects will be better for those who have finished a technical than for those who have finished a general course.

course of study when they agree that employers prefer technical graduates; they are much less likely to express such satisfaction and very much more inclined to report a preference for a general course when they express strong disagreement (in effect holding that general course graduates have better career prospects).

The opinion item was less immediately relevant to students in the commercial or the agricultural courses, but while the patterning of course preferences is not as clear among them, it is generally consistent with their labor-market perceptions, nevertheless. The proportions preferring the technical course are greater among those who strongly agree than among those who disagree with the proposition that employers prefer technical graduates, and conversely with respect to leanings toward the general courses. Just how these labor-market perceptions come to be what they are, is another question. The interdependencies among parental backgrounds, type of course attended, educational preferences, and labor-market perceptions is a problem with which we will be concerned repeatedly, from one perspective or another, in the chapters that follow. Evident enough already is the fact that "stage one" moves (into the labor market or into one or another type of upper-secondary curriculum) are indeed associated, however loosely, both with background traits and with perceptions of future career options.

VI. A Stage I Decision Model and the Allocation of Youth among Curricula

Despite the considerable detail of the preceding analysis of relationships among family backgrounds, types of secondary schooling received, and course preferences, the discussion has been unavoidably spotty and incomplete in its coverage of key elements of a rational decision model. It is necessary at this point to be more explicit and systematic in the specification of a full model and of the useful but limited nitches the preceding analysis can occupy in that model. In doing this we necessarily anticipate subsequent chapters in some measure, since secondary-school decisions do indeed derive from expectations; those decisions are not determined regardless of expectations, simply by a mysteriously nonrational propulsion or drag from family backgrounds and community environments. Moreover, we are confronted from the start with the necessity of taking future educational as well as job and earnings expectations into account.

The decision problem, stated formally, is to find the optimum optimorum U^*_{ki} among a set U_{ki} of optimal net utility functions for individual i for upper-secondary school and course alternatives $k_1 \ldots . k_n$. There are a number of ways in which we could break down the function U_{ki}, but most convenient for our purposes is to begin with three component utility functions.

(1) $$U_{cki} = U_{cki}(C_{ki})$$

(2) $$U_{koi} = U_{koi}(J_{koi},\ Y_{koi})$$

(3) $$U_{kzi} = U_{kzi}(J_{kzi},\ Y_{kzi},\ C_{kzi})$$

The first of these is a cost function, the disutility or foregone utility to i associated with outlays of resources on schooling k. The second specifies net present utility values of expectation profiles for individual i with respect to future job satisfactions and earnings profiles on the assumption of no further schooling after completion of the upper-secondary option k. The third function specifies net present utility values of expectation profiles with respect to post-secondary-school careers, earnings and educational costs associated with selection of secondary schooling k and continuation from k to higher education z, for individual i. The sets of variables specified in these functions are as follows:

C_{ki} is costs of secondary schooling k to individual i.

J_{koi} and J_{kzi} are preference-opportunity matrices of perceived future career options associated with secondary schooling k for individual i, respectively without and with higher education. Since these are preference matrices for the individual, individual differences in utility functions relating to job satisfactions or "tastes" are already in part taken account of in the selection of certain career options as worthy of attention, along with selection in terms of the options to which one course

of study versus another is presumed (expected by the individual) to give access.

Y_{koi} and Y_{kzi} are expected earnings matrices associated with secondary schooling k for individual i, respectively without and with higher education. These expectations may have various kinds and degrees of uncertainty and spread as of any given anticipated future date, along with diverse time paths. Some of the possible ways of handling uncertainty problems will be discussed in later chapters, but initially we will treat Y_{koi} and Y_{kzi} as sets of quasi-certain options.

C_{kzi} is anticipated out-of-pocket costs of higher education for individual i when going on from secondary schooling k to higher education. (As we will see later, the differences among k and i in this respect could be substantial, both on account of the kinds and costs of higher institutions to which access is gained and the costs of that access.)

Treating the utility functions as cardinal, we may then sum them to get the total net utility to individual i of selecting secondary-school option k:

$$(4) \qquad U_{ki} = P_{koi}U_{koi} + \Sigma_z(P_{kzi}U_{kzi}) - U_{cki} + \Pi_{ki}$$

The term Π_{ki} in this formulation represents the direct, immediate satisfactions (positive or negative) associated by i with secondary schooling k; this term is added to complete the model, but will be ignored as far as

possible in most of the discussions to follow. P_{koi} is the subjective probability weight given by individual i to the likelihood that secondary education k will or would be terminal for him, while the values P_{kzi} are the subjective probability weights he gives to the likelihood that he would go on from schooling k to higher education z before entering the labor market. The values of P_{koi} and of P_{kzi} depend in part on the course of study and school k and how far it prepares youth for entrance examinations to higher education z (or any higher education), but these probabilities will depend also on the relative values for U_{koi} and for the sets of U_{kzi} (or subsequent z options associated with the secondary schooling option k). In other words, P_{koi} and P_{kzi} refer not to sets of autonomous coefficients but to sets of variables in a simultaneous system. Optimization constraints will push a particular P_{kzi} to zero when the kz option entailed is regarded by the individual as so inferior to other options open to him as to be of no interest, even though this one may be readily accessible; this is one of the ways in which an overwhelmingly large and complex decision matrix is trimmed back to something that enables people to take a course of action.

There are of course external constraints on P_{koi} and P_{kzi}, preferences aside. Most obvious among these are relationships between individual abilities and ability cut-offs in entry requirements for the various k and z options.

Let A_i = individual ability

K_a = ability cut-off in secondary schooling k

Z_a = ability cut-off in entry to institution of higher education z.

For the present we set aside the awkward question as to just what in fact is meant by "ability." We may then write the constraints:

$$P_{koi} + \sum_{z} P_{kzi} = 1 \text{ when } A_i \geq K_a$$

$$P_{koi} \text{ and all } P_{kzi} = 0 \text{ when } A_i < K_a$$

(The student in this case cannot qualify for entry to k.)

$$P_{kzi} = 0 \text{ for any option in which } A_i < Z_a$$

Comparing the various U_{ki} estimated subject to these constraints, the decision-maker optimizes by selecting the secondary-school option that gives the maximum expected value, U^*_{ki}.

To see better just what in this model we have and have not picked up empirically in this chapter, it will be helpful to specify further the determinants of J, Y and C as these may distinguish among individuals. Here we take it for granted that schools and courses $k_1 \ldots k_n$ will differ in the relative ease of access they provide to higher education and in the extent to which they prepare youth for direct entry into one type of occupation versus another, both in fact and in individual perceptions. (More direct evidence concerning those differences will be introduced in later chapters.) The job-satisfaction, earnings, and cost matrices or (in some instances) vectors may then be written as themselves functions, generalized as follows:

(5) $$J_{koi} = J_{ko}(A_i, F_i, M_i, I_i)$$

(6) $$J_{kzi} = J_{kz}(A_i, F_i, M_i, I_i)$$

(7) $$Y_{koi} = Y_{ko}(A_i,\ F_i,\ M_i)$$

(8) $$Y_{kzi} = Y_{kz}(A_i,\ F_i,\ M_i)$$

(9) $$C_{ki} = C_k(D_k,\ L_{ki}E_{ki}W_i)$$

where E_{ki} is in turn a function of A_i as well as of k.

(10) $$C_{kzi} = C_{zk}(D_{zki},\ L_{zki},\ E_{zki},\ W_i)$$

where D_{zki} and E_{zki} are in turn partially functions of A_i as well as z and k

The variables introduced in the above functions and not already defined are as follows:

F_i = family-related career options and constraints (most obviously, places in a family business or the family farm)

M_i = location factors in visibility of job and earnings opportunities in their relationships to education options

I_i = sets of other background, environmental and personal traits affecting the individual's job preferences and perceptions

D_{ki} = direct private costs of schooling k, in fees, tuition and so on.

L_{ki} = extra costs of schooling k due to lack of local accessibility

E_{ki} = costs of entry to schooling k, in examination fees, entry fee, tutoring costs (if any) to prepare for entry, and so on

W_i = an indicator of family wealth and access to low-interest financing

D_{zki} = direct costs of higher education z for individual i from secondary schooling k. These costs will differ both with the type of higher institution to which the youth gains access (which is itself affected by k) and with the extent of scholarship help he receives.

L_{zki} = effects of location and accessibility on costs of attending higher education z

E_{zki} = costs of gaining access to higher education z from secondary schooling k. This includes costs of being ronin.

Where now do we stand? Clearly we do not have direct observations on Y_{koi} or Y_{kzi} matrices as seen from the Stage I decision point, at entry to upper-secondary school; nor can we sort out from that perspective individual rankings of relative earnings prospects for various course or school alternatives even in the later perspective of the graduating seniors. Our income expectation data, which are as of Stage II decisions, allow comparisons of individual assessments for college and non-college alternatives given a particular (now past) upper-secondary schooling k. Neither have we any direct observations on individual job preference-opportunity perceptions in relation to choices among secondary curricula or schools. Here again, where we can tune in more precisely, given our data, is at a stage when pre-secondary-school job perspectives and the effects of influences over

the three years since entry to upper-secondary school on career perspectives have merged. Nor, finally, have we direct measures for all components of C_{ki}. But we do have some important clues concerning the operation of this model in determination of allocation of individuals among secondary courses and schools, nevertheless.

We may pick up some of the more illuminating empirical threads by looking at the right hand side in equations (5) through (10), and taking as the "dependent variable" the type of school attended. In the language of the model, assuming a rational decision process the question is which k option gives us the maximum value U^*_{ki} for whom?

The role of ability is both important and elusive. Does ability interact with education to enhance (or diminish) the perceived relative advantages of an academic, or technical, etc. course of training in upper-secondary schools? Unfortunately we have no direct evidence on this important question. The only direct quasi-ability measure available to us is the self-ranking of respondents in relation to their classmates, which obviously cannot be used to analyze the role of ability in career or earnings perceptions and expectations of youth in one schooling category as compared with another--although the internal rankings can be and will be examined in relation to occupational aspirations in other contexts. We do have some other pieces of evidence, however. One of these concerns ability cut-off effects. Table 3-19 suggests a very large measure of self-elimination prior to

attempting entry where standards are high, the highest proportions reporting failure in examinations for a preferred course were among youth who nevertheless had found entry to the more demanding curricula: General B and technical. Their failures had been in attempts to reverse these choices or to gain entry to technical junior colleges. Also interesting are indirect indicators of "ability" in the broadest sense, as it is picked up by proxy variables such as parental education or occupational status. The difficulty here, however, is that we are simultaneously picking up indicators for what we have designated as I_i and W_i, especially so far as orientations to the academic general course are concerned. However much measured achievement may correlate with parental status, achievement alone (which is already much more and other than "ability" more narrowly defined) can hardly account for the evidence in Table 3-8, for example, that sons of top status fathers enter the General B curriculum in such overwhelming proportions.

So far as direct costs (D_k) are concerned, differences in average costs among curricula are negligible, even though there are some high-cost private schools and there are substantial variations in amounts individual familes spend on supplementary educational materials and activities. According to a special study of Educational Expenses Borne by Parents, 1960-61, (in Japanese),[1] the 1960 direct "school expenses" borne personally

[1]Table 12, page 31.

averaged between 31,000 and 32,000 yen in the agriculture, commerce and technical curricula, and there was another 3,000 yen or more in supplementary educational "home expenditures" for these youth. The average "school expenses" figure for the general schools was lower, at 28,000 yen, but higher average home expenses neutralized this cost saving among the general school pupils as a whole.[1]

The costs of attending courses not available in the local area are reflected clearly enough in the facts that rural youth enter General B tracts as often as urban youth, but that those not entering General B or agriculture go into General A rather than commerce or technical courses; the latter simply are not generally accessible in the most rural locations. But here there is unquestionably an interactive effect with perceptions of options such as we designated by the variable M_i, referring to degrees of contact with and visibility of urban or metropolitan options. (M_i is measured in our data by several location attributes, but especially by the variable we designated FREQ-M, or number of times a day it was possible to start from a locality

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[1]The fact that education is by no means costless to the individual Japanese, even setting foregone earnings aside, is well understood in Japan and has been frequently documented. For example, a report of student expenses in elementary and secondary schools in 1961-62 indicated that summing fees, textbook costs, transportation and other minor school expenses the average private cost to the student in direct outlays was 9,400 yen in the elementary grades, 13,600 yen in lower secondary, 18,800 in upper secondary night schools, and 33,000 in upper secondary full day programs. These sums are roughly the equivalent of $10, $38, $52, and $92. They are not negligible sums in relation to Japanese incomes. (See Japan Ministry of Education, Education in Japan, 1964, p. 113.

to a metropolitan place of over a million persons using public transportation facilities.)

The inclusion of the term W_i in a cost function requires special comment, since the more conventional economic decision models relating to education have normally distinguished ability to pay as a factor quite independent of costs. If we were looking at the schooling choice solely or primarily as a consumption choice rather than as an investment, the conventional procedure would indeed be the more appropriate. However, if the main thrust of these decisions with respect to schooling is viewed in terms of anticipated effects on subsequent job options and earnings relative to present costs--if the perspective, in other words, is that of an investment--then the important effect of differences in family wealth and income is primarily a matter of how readily the individual or his family may make a trade between present and future.[1] In a perfect capital market even a very poor family could draw on anticipated future earning power. However, capital markets with respect to investments in education are very far from perfect, and the interest rates paid directly or implicitly when poor families invest in education are likely to be much higher than among families economically better off--assuming that the poor families can get hold of such resources at all. In addition, families used to living on small incomes and thinking in correspondingly small money terms may be much more fearful of risking

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[1] On this theme see Gary Becker 1967.

current capital commitments even where the options are open to them; if there is such a bias, it would impose an additional subjective-risk component on the interest costs of educational investments among the relatively poor. In a reasonable approximation we might take interest costs to be an exponentially rising function of the funds needed from outside sources to finance an investment. The amount of such funds needed by individual i for secondary-education option k will depend not only upon any special costs for option k (included in D_{ki} and L_{ki}), but also upon how pressing are other demands on the family's resources, including the weight of the present sacrifice entailed in foregoing the youth's earnings while he is in any sort of upper-secondary school. Because such foregone earnings are common to all of the options, we did not include them directly in the decision model for choices among k.[1] However, these common foregone earnings will

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[1]Once a very modest income threshold is passed, there is and has been virtually no association between parental income and the proportion of youth coming out of the 9th grade who have continued into full day-time upper-secondary schools. While overall proportions have risen substantially over the past decade, it is still relevant that as early as 1959 at least, half of all youth continued into upper-secondary schooling almost regardless of family income once the modest income level of about $440 to $600 a year was passed. Below that level only 30 per cent were entering upper-secondary day schools. What did show up as a function of incomes in secondary education was proportions attending night secondary schools, an option that both reduced cash outlays on education and gave more opportunity for the young person to earn part, at least, of his keep and even to help his family with the younger children and their school expenses. Porportions going to night secondary schools ran at around 8 per cent up to family incomes of $900 a year, then declined steadily to 1.4 percent in families with incomes of $2,500 or more a year. (For further evidence see the Ministry of Education's study of Higher Education and Government Loans, in Japanese.)

affect not only whether a youth enters upper-secondary school at all but also his choices among the secondary options, through their relationship to affects of poverty (low W_i) on marginal interest rates associated with the more expensive k options. Furthermore, the kz options, which carry over into higher education, entail a further delay in economic contributions of youth to their families; it may well be that the part played by W_i in the function C_{zki} is substantially greater than its effects on C_{ki}. As a first empirical step, in this chapter we make use of parental occupational status as a preliminary proxy variable for economic status--though there is of course the problem of identification where low status is associated with other factors (as test performance or perceived career potentials) that are also at play.

We have already pointed out that parental economic status was important in several contexts, but especially in (1) effects of low economic status on entry to upper secondary schools (of whatever king), and (2) effects of anticipated costs of university education on choices among courses at the upper secondary level. The fact that the selectivity ratio into upper secondary schools (whatever the type of school) was as low as .63 for low-status youth in Hiroshima, where we have our most representative sample of the upper-secondary student population, unquestionably reflects strong economic pressures, however much it may be affected also by test performance and damped career aspirations. At the same time, the strong representation of low status youth in the technical relative to the other upper-secondary

schools, taken together with their low representation in General A courses (Table 3-8), strongly suggests an allocation process in which the initial considerations are very pragmatically economic in several respects, and quite unpolluted by "ability" distortions. Technical schools seem to be seen by such youth as promising both interesting and lucrative employment without incurring the costs in both working time and cash outlays that are involved in taking advantage of the readier college options associated with General B curricula. There are unquestionably economic constraints at play in the associations between parental education or status and realization of course preferences displayed in Table 3-18. The college cost factor seems to be considerably more important than differences in costs among various secondary schools, the special elitist private schools aside, in determining choices among upper-secondary curricula.

It may be of interest to note at this point that the mean annual earnings of employee fathers of males enrolled in General B courses was 933,000 yen as compared with amounts ranging from 622,000 yen for wage and salaried fathers whose sons were enrolled in agricultural curricula to 715,000 yen for those with sons in technical schools. Net annual incomes of proprietors or family-business (non-farm) fathers of youth in the General B and commerce courses were double those of such fathers of students in other curricula. (These and related data are presented in Chapter IV, Table 4-12.)

This last observation points to the factor in the earnings expectation functions that we designated as F_i, referring to special family-linked career opportunities (and constraints). Clearly the student bodies of the commerce schools are a mixed population, but there can be no doubt of this linkage in curriculum choice. It is not always an income-maximizing choice from the strictly individual point of view, to be sure, but it can be important as a constraint even when not as a special opportunity. Economic obligations to family can and do weigh heavily here. So can the unconcious conditioning of career perceptions. Thus, as we showed in Table 3-7, sons of white-collar men and high-level executives go heavily into General B; we suggest that this is both a reflection of the effects of their backgrounds on perceived career preferences associated with continuing into higher education and a reflection of special family-linked opportunities to which higher education may give them access--the differential effects on J_{kzi} over J_{koi} of I_i and F_i among these as compared with other youth. Sons of traders and artisans follow their fathers and families into commerce, and sons of farmers (and such sons only) take up agriculture. In particular, as Table 3-12 showed, it is the first sons of farmers who enroll in agricultural schools and who anticipate taking over the family farm; data presented later indicate that youth in this category have relatively high, not low, income expectations, at least by the time they graduate from upper secondary school.

Finally, there is clear evidence of the effects of limited perceptions of

options at entry stage (I_i and M_i dampening effects in the terminology of the model) in the data of Table 3-17 concerning attitude shifts over the years in upper secondary school. It is the youth of low status backgrounds in General A, agricultural and technical curricula who most often reported a change of view concerning course options between entry to upper secondary school and graduation.

In sum, many odd bits and pieces of empirical information can be put together to demonstrate the systematic character of the decision processes whereby individuals respond to the economic options open to them. Even though it is not possible with the data at hand to round out the model empirically, or to discriminate sharply between factors that are operating jointly to determine those choices, both the economic rationality of these behavior patterns and the operation of social constraints on individual choice come through clearly in a society that remains at once dynamic, open, and still cemented by traditional obligations.